



# 3 Building Great Streets

*Dimensions, Assemblies & Placemaking*

**Transforming Burlington's rights-of-way into "Great Streets" requires standards for design.**

This section should be consulted as the starting point for any construction project within Burlington's downtown rights-of-way, in order to ensure project design meets all required standards. This section provides standard cross-sections for streets based on the recommended curb-to-curb dimensions, guidance on the layout of elements within the right-of-way and at intersections, and the minimum required and preferred dimensional standards for all of the "zones" of the right-of-way. This section draws on both state and local requirements, as well as industry guidance and best practices. Finally, this section provides guidance for "placemaking" options when the right-of-way is constrained, thus making it difficult to incorporate the preferred dimensions for each of these zones. A summary chart of *"Existing and Proposed ROW and Curb-to-Curb Dimensions"* on page 64 outlines all of the streets within the downtown core for quick reference.



Zabby and Elf's on College St. (Photo credit Voyages Végé)

## Modal Hierarchy

A clear hierarchy of transportation modes is critical to inform design and operation decisions in the public right-of-way. This hierarchy will influence cross-sections, intersection design, signal timing, maintenance scheduling, and other operations. These standards are based on the adopted policies in *planBTV Downtown @ Waterfront* and the *Municipal Development Plan* that state that the "pedestrian is king." This means that while streets are designed to improve the quality and functionality for all modes, design solutions that improve safety and accessibility for people who walk-- the most vulnerable users of our streets-- should be prioritized.

To achieve this, the following hierarchies should guide the design of streets based on their role within the downtown core:

**Pedestrian > Bicycle > Transit > Automobile** along a bicycle priority street with bikeways or a bike corridor

**Pedestrian > Transit > Bicycle > Automobile** along a major transit corridor

### Pedestrians

Most trips begin and end on foot and great street design should embrace this notion. Pedestrians are the life of city streets. Downtowns, with their shopping districts, entertainment areas, and civic institutions, typically bring high volumes of pedestrian activity and require high quality walking environments to go with them.

People who walk are extremely vulnerable to injury when forced to compete for space with vehicles; therefore, the design and operation of streets and intersections must protect them. The needs of pedestrians should always be considered first when designing streets with limited right-of-way. This means optional elements within the ROW should not compromise the minimum required clear sidewalk space. Sidewalks, crosswalks, pedestrian signals, and other pedestrian facilities must accommodate pedestrians of all abilities and comply with the Americans with Disabilities Act (ADA). And finally, all street design, even in cases where pedestrians are not the predominant user, should provide for quality space where people can walk, stroll, or simply sit.

### Bicycles

Like pedestrians, bicyclists are vulnerable users of public space who benefit from reduced traffic speed and dedicated facilities. However, bicyclists are significantly different from pedestrians. They travel faster than pedestrians but more slowly and less visibly than automobiles. Their skill level varies greatly, resulting in a wide range of speeds and behaviors. Also, bicycling is a social activity, and people often ride side-by-side or in groups. Bicycle facility selection requires an understanding of the street condition; bicycle usage, volumes, speeds and routes;

and automobile level of service. Generally, great street design embraces the notion that vehicles should travel at slower speeds, which allows bicycles to share the right-of-way with other modes, unless *planBTV Walk/Bike* has identified that a specific bike facility is necessary.

### Transit

Buses extend the range of access for Burlington residents and visitors. They provide connections to essential services, jobs, housing and recreation and reduce the demand for automobile trips. Buses are a critical element of street design given their size and operational characteristics. The considerations for street design include lane width, intersection design, signal timing (often adjusted to give transit an advantage, transit-signal priority), pedestrian access (street crossings at bus stops), sidewalk design (making room for bus shelters), bus stop placement and design (farside/nearside at intersections, bus pullouts, or bulb outs), and bike lane crossings.

### Automobiles

Private automobiles are an integral part of Burlington's circulation system. Even though they have been placed fourth in the modal hierarchy, they are still the first mode choice for most residents and visitors, and as such must be accommodated. However, as vehicles are the least vulnerable to injury, and as technology changes the way the personal vehicle is used, they should be considered within the constraints of lower speeds that encourage more prudent driving. Commercial vehicles will be given more leeway, as the efficient delivery of goods and services is paramount to supporting a healthy economy and meeting needs of local businesses.



"Pedestrian is King" modal hierarchy diagram  
(walking, cycling, public transit, private vehicle)

# Balancing Right-of-Way Zones

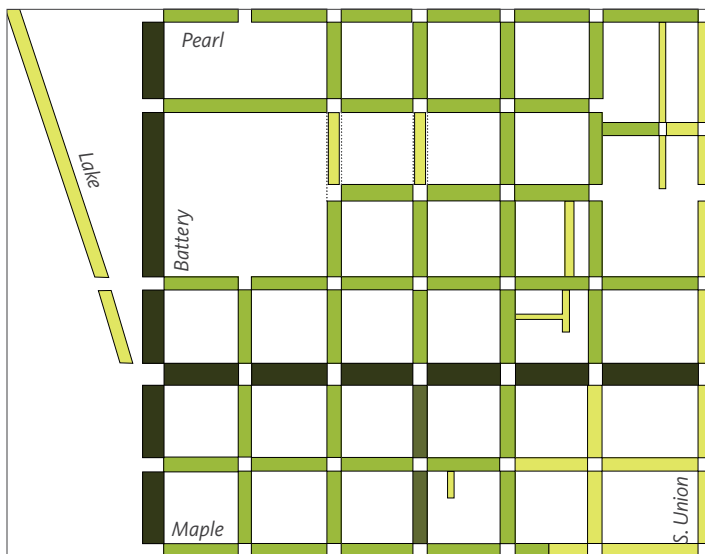
## Public Right-of-Way

In designing any street in downtown Burlington, the first critical dimension to determine is the width of the ROW, and any encroachments within it. In downtown Burlington street right-of-way is defined as the public space between private property lines, and **there are two prevailing dimensions: 99' and 66'** (see chart on [page 64](#) for detailed legal and actual row widths). Designers should note that the row may change from block to block along a given corridor. Further, the effective ROW may be slightly irregular even within a single block. In some cases, this is due to encroachments from older structures that may have been built before modern surveying, or from more recent encroachments by accessory structures such as terraces, staircases, or ramps. In other cases, building faces which are set back from the property line may give the impression of a wider ROW, even though the legal dimension remains the same.

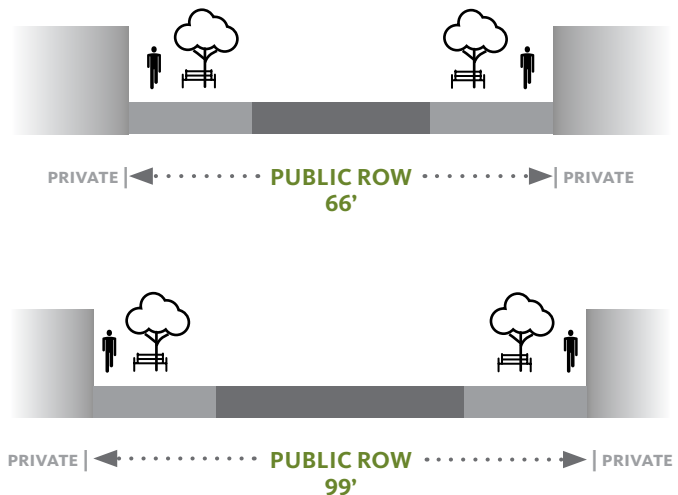
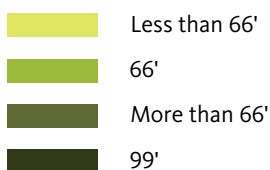
While the right-of-way designation can be changed through legal action, this is relatively rare, and is extremely costly and legally complicated. The critical variable for creating Great Streets is the relative width of the Roadway and

Pedestrian Zones within the right-of-way, and ensuring that the proportions of these zones create a balance that achieves the Great Streets principles. Unless otherwise directed, designers may view the right-of-way dimension as permanent parameter of the street design, and seek ways to optimize the dimensions of the prescribed zones by considering the relocation of curbs (see the following sections regarding pedestrian and roadway zones).

The City may wish to consider widening the public row along key corridors in order to allow for a more sufficient ROW width to accommodate the corridor's design considerations. This strategy should be pursued selectively, as expanding the legal rowa does not have the automatic result of creating the physical space to construct a preferred street cross-section. Instead, this will produce an incremental result, with additional space for the pedestrian zone gained as buildings and sites affected by the new ROW dimensions are redeveloped. This should only be considered when existing development patterns would allow for wider ROW without major disruptions to the existing building fabric (i.e. a street has many contiguous properties with buildings setback from the road) and where an entire block/several blocks can be widened together to provide continuity in the streetscape.



### Existing ROW Width



*There are two prevailing ROW widths in downtown Burlington: 66' and 99'. The standard cross sections assume that the ROW dimension is fixed.*

## Roadway and Pedestrian Zones

The second critical dimension for street design is the Roadway Zone width—the distance between the curb face on one side and the curb face on the other—and the resulting width of the Pedestrian Zone on either side of the street.

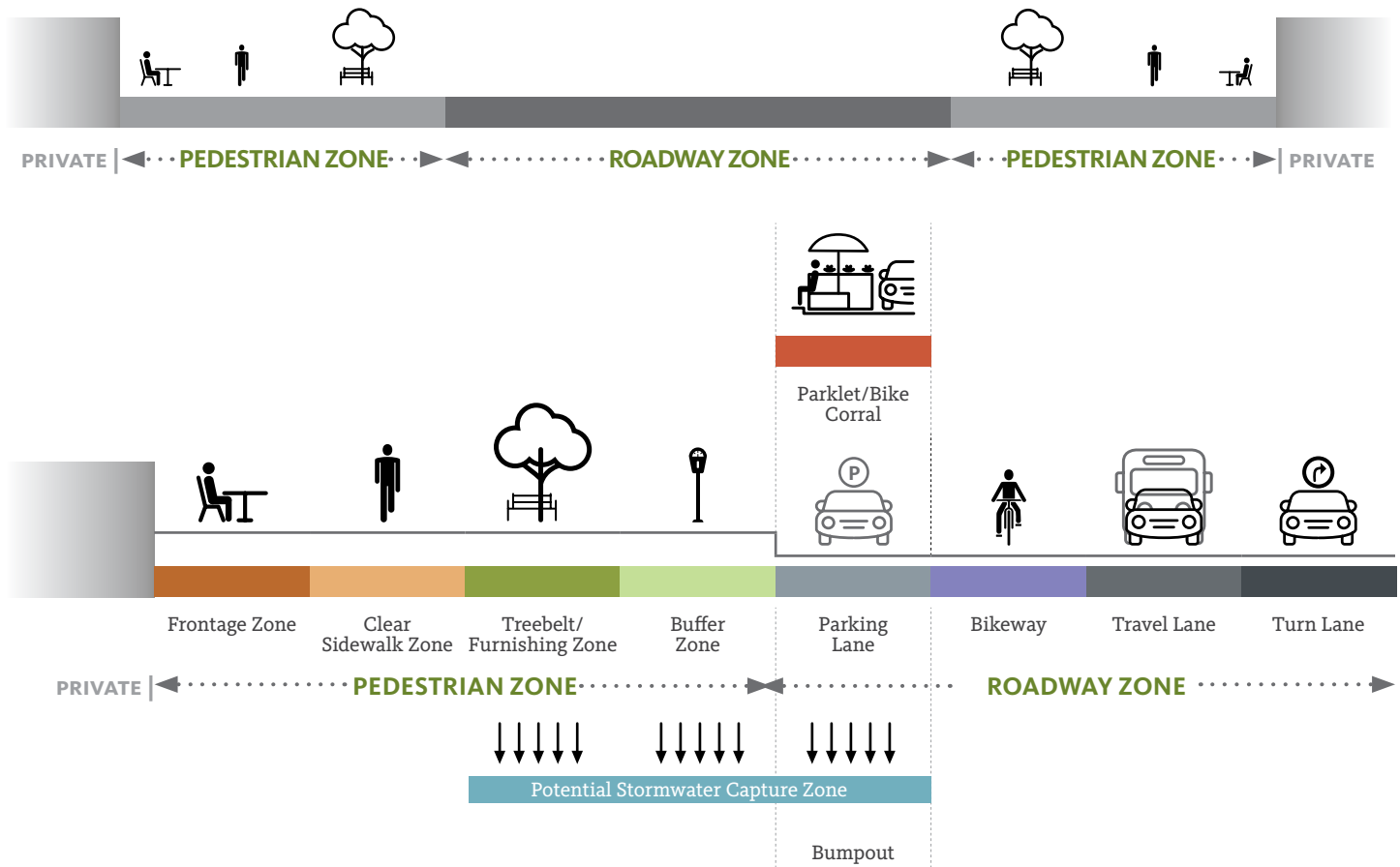
For the purpose of these standards, zones are organized as follows:

- The **Roadway Zone** includes turn lanes, travel lanes, parking lanes, and bicycle lanes. Although parklets function as an extension of the pedestrian zone, they typically occupy space in the parking zone.
- The **Pedestrian Zone** includes the curb, stormwater/raingardens, buffer zones, tree belt/furnishing zones, clear sidewalk zones, and frontage zones (special circumstances may call for a cycle track to be incorporated into the pedestrian zone).

In "*Roadway & Pedestrian Zone Options*" on page 66, the minimum and recommended dimensions for the Roadway and Pedestrian Zones are based on the individual street types described. While there are some outliers due to larger or smaller ROW, in general the application of these standards will result in the following proportions:

- 40' roadway zone yields 13.5' pedestrian zone
- 36' roadway zone yields 15' pedestrian zone
- 35' roadway zone yields 15.5' pedestrian zone
- 30' roadway zone yields 18' pedestrian zone

### Elements within Roadway & Pedestrian Zones





Balancing Roadway & Pedestrian Zones

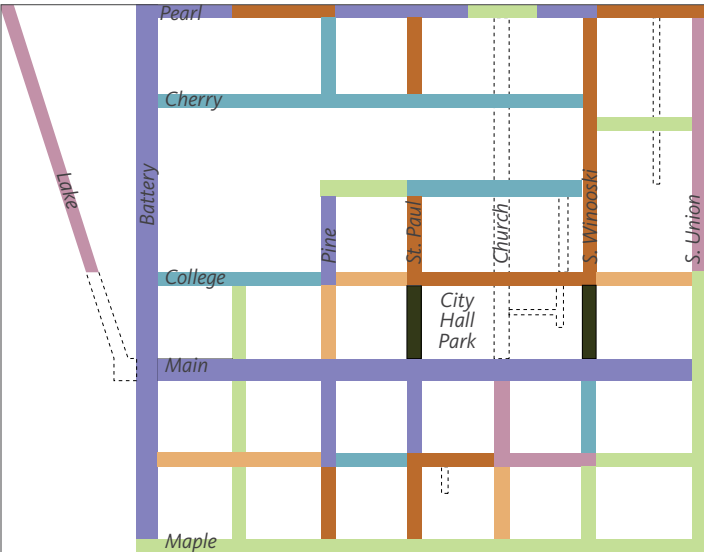
In Burlington, for downtown commercial streets with building faces at the property line, 13' Pedestrian Zones are considered to be insufficient, as they limit what can be accomplished outside of the Roadway Zone. Therefore, these standards propose that 15' pedestrian zones should be considered the desirable dimension on commercial streets. Since the 35' roadway width yields 15.5' pedestrian zones, these standards recommend that existing 35' roadways remain in place. The standards also recommend that where the existing roadway is greater than 35' wide, it be narrowed in order to achieve this preferred dimension. While this strategy does narrow the Roadway Zone, more than 50% of the ROW remains dedicated to the movement of vehicles, transit and bikes.

Changing the width of the roadway usually involves moving the curb and gutter and its associated systems. The curb location usually determines, or at least indicates, other critical locations such as underground utilities which run parallel to the roadway, and their junctions with “lateral”

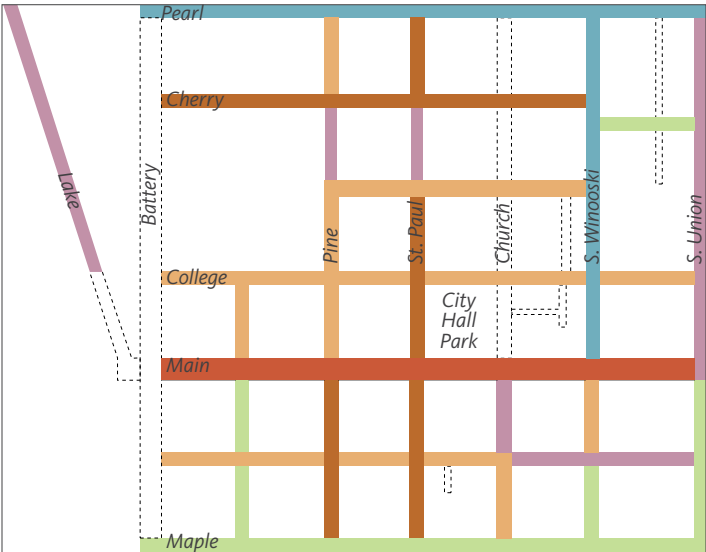
lines which connect services to adjacent private property. The curb also typically establishes the location for the gutter, storm drains, and sewer system. Changing curb locations is usually more complex and costly than merely moving striped lanes within the roadway, or moving street furnishings within the sidewalk zone. However, in some cases moving the curb location (along with associated stormwater facilities and utility lines) is an essential design tool to rebalance the proportion of roadway to usable pedestrian space for other purposes than vehicular movement, and is significantly less costly and challenging than expanding the row.

When a project boundary includes an entire block face or more, designers should work with the City to investigate opportunities for relocating the curb to meet the preferred dimension for Roadway and Pedestrian Zones. In some cases, utility relocation, cost, or other unique constraints may prevent the complete redevelopment of the street, but it should be explored as a starting point in all project design.

Curb-to-Curb: Existing



Curb-to-Curb: Recommended



Recommended curb-to-curb widths are based on known design considerations. For those streets for which a unique master plan is recommended, the recommended roadway width may be subject to change.



## Existing and Proposed ROW and Curb-to-Curb Dimensions

Street	From/To	Existing ROW	Existing Curb-to-Curb	Proposed Curb-to-Curb
<b>Streets with Typical 99' ROW</b>				
<b>Main Street</b>	Union - Winooski, St. Paul - Battery	99'	50'	38'
	Winooski - Church	99'	64'	38'
	Church - St. Paul	99'	50'	38'
	St. Paul - Pine	99'	71'	38'
<b>Battery Street</b>	@ Pearl St. Intersection	99'	59'	TBD
	@ Cherry St. Intersection	99'	46'	TBD
	Cherry - Main	99'	48-49'	TBD
	Main - King	99'	50'	TBD
	King - Maple	99'	45'	TBD
<b>Streets with Typical 66' ROW</b>				
<b>Pearl Street</b>	Union - Winooski	66'	37' (45' @ bus berth)	40'
	@ Winooski Intersection	66'	48'	40'
	@ Church Intersection	66'	44' (30' @ curb exten.)	40'
	@ St. Paul Intersection	66'	48'	40'
	Pine - S. Champlain	66'	39'	40'
	S. Champlain - Battery	66'	45'	40'
<b>Cherry Street</b>	Winooski - Battery	66'	40'	36'
<b>Bank Street</b>	Winooski - St. Paul	66'	40'	36'
	St. Paul - Pine	66'	30'	35'
<b>College Street</b>	Union - Winooski	66'	35'	35'
	Winooski - St. Paul	66'	39' (30' @ Church St)	35'
	St. Paul - Pine	66'	35'	35'
	Pine - Battery	66'	40'	35'
<b>King Street</b>	Union - Winooski	50'	30'	28'
	Winooski - Church	40'	27'	28'
	Church - St. Paul	66'	38'	35'
	St. Paul - Pine	66'	40'	35'
	Pine - Battery	66'	35'	35'
<b>Maple Street</b>	Union - Winooski	57.75'	30'	30'
	@ Winooski Intersection	61.75' (west side) 72.75' (east side)	30'	30'
	Church - Battery	66'	30'	30'
<b>S. Winooski Avenue</b>	Pearl - College	66'	39'	40'
	College - Main	66'	44'	40'
	Main - King	57.75'	40'	35'
	King - Maple	57.75'	30'	30'
<b>Church Street</b>	Pearl - Main (Marketplace)	66'	39'	N/A
	Main - King	66'	27'	N/A
	King - Maple	66'	35'	35'
<b>St. Paul Street</b>	Pearl - Cherry	66'	Transit Center	N/A
	Cherry - Bank	To be established @ 60'	N/A	28'
	Bank - College	66'	39'	36'
	College - Main	66'	52'	36'
	Main - King	99' (82.5')	52'	36'
	King - Maple	99' (82.5')	38'	36'

Street	From/To	Existing ROW	Existing Curb-to-Curb	Proposed Curb-to-Curb
<b>Streets with Typical 66' ROW Continued</b>				
<b>Pine Street</b>	Pearl - Cherry	66'	40'	35'
	Cherry - Bank	To be established @ 60'	N/A	28'
	Bank - College	66'	43'	35'
	College - Main	66'	34'	35'
	Main - King	66'	43'	36'
	King - Maple	66'	37'	36'
<b>S. Champlain Street</b>	College - Main	66'	30'	35'
	Main - Maple	66'	30'	30'
<b>Streets with Other ROW Dimensions</b>				
<b>S. Union Street</b>	Pearl-College	<b>49.5'</b>	26'	28'
	College-Main	49.5'	30'	28'
	Main-Maple	49.5'	30'	30'
<b>Lake Street</b>	Depot-College	49.5'	20'-28'	20'-28'
<b>Buell Street</b>		60'	28'-29'	30'
<b>Center Street</b>		36'	24'	N/A
<b>Orchard Terrace</b>		35'	20'	N/A
<b>Browns Court</b>		30'	20'	N/A

# Roadway & Pedestrian Zone Options

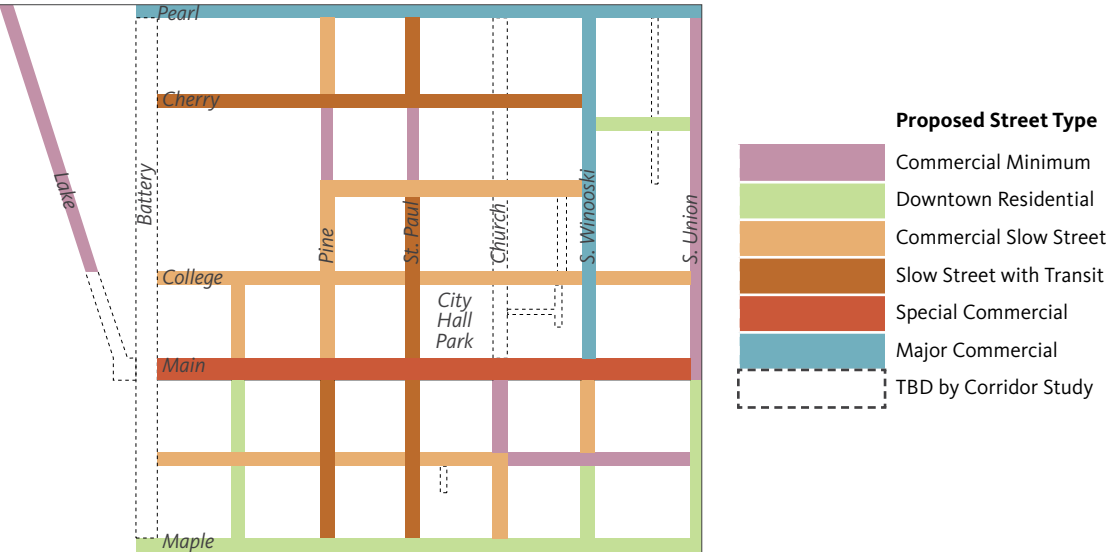
# Great Street Types

This section provides cross sections and Pedestrian & Roadway Zone options for the following Great Street types.

Each Great Street Type includes a typical cross section, options for the layout of laneways in the Roadway Zone, and minimum and recommended elements within the Pedestrian Zone. The street types are based on the assumption that a typical 66' or 99' right-of-way exists; where the actual right-of-way varies from these dimensions, designers should work with the City to determine the most appropriate way to allocate the

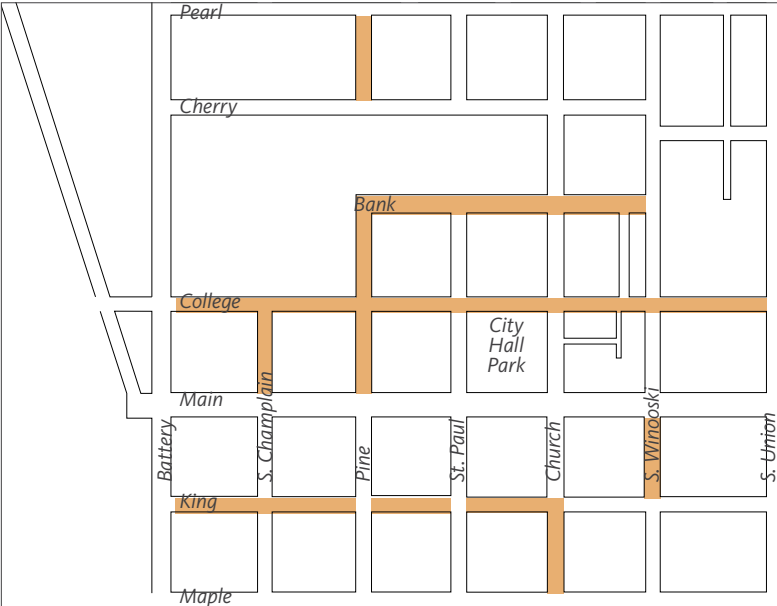
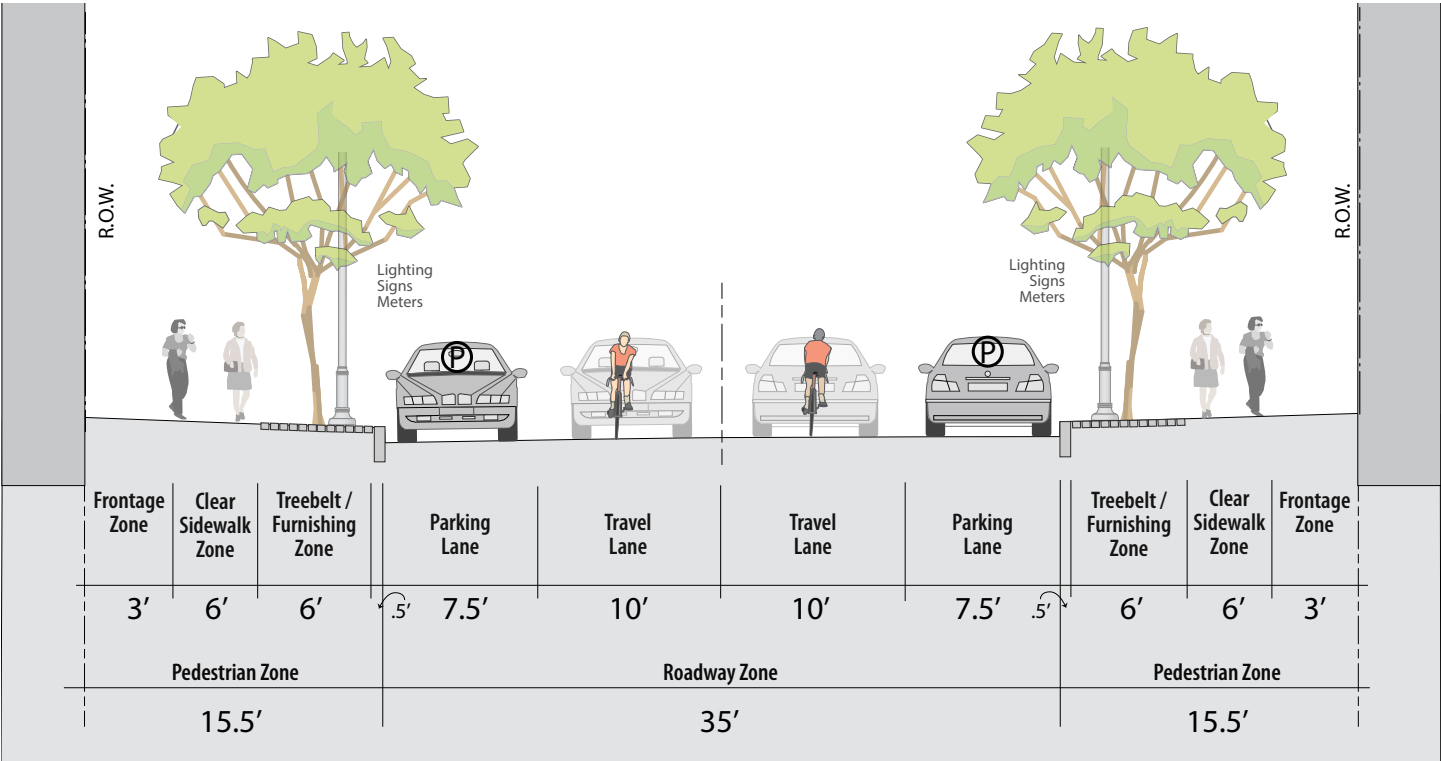
right-of-way between the Roadway and Pedestrian Zones. Options for these zones have been provided based on the standard zone dimensions for "Roadway Zones" on page 98 and "Pedestrian Zones" on page 101. Selection of these options should be informed by the design considerations found in Chapter 2, or by the outcome of a scoping study or other project development process.

- Commercial Slow Street (66' row, 35' Roadway)
- Commercial Slow Street with Transit (66' row, 36' Roadway)
- Minimum Commercial Street (66' row, 28' Roadway)
- Major Commercial Street (66' row, 40' Roadway)
- Special Commercial Street (99' row, 38' Roadway)
- Downtown Residential Street (66' row, 30' Roadway)



Commercial Slow Street  
(66' ROW, 35' Roadway)









35' Roadway Zone—31' Pedestrian Zone











### Roadway Zone Options

Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.









*Note: Arrows indicate direction of travel.*

Typical Cross Section				
				
	<b>Park</b> 7.5'	<b>Travel</b> 10'	<b>Travel</b> 10'	<b>Park</b> 7.5'






Alternative Options				
				
	<b>Bike</b> 5' + 2.5'	<b>Travel</b> 10'	<b>Travel</b> 10'	<b>Bike</b> 2.5' + 5'

				
				
	<b>Park</b> 7.5'	<b>Travel</b> 10'	<b>Travel</b> 10'	<b>Bike</b> 2.5' + 5'

### Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.

					
15.5 FEET					
	<b>Curb</b>	<b>Buffer Zone *</b>	<b>Tree Belt/ Furnishing Zone</b>	<b>Clear Sidewalk Zone **</b>	<b>Frontage Zone ***</b>
<b>Preferred</b>	6"	0'	6'	6'	3'
<b>Minimum</b>	6"	0'	6'	5'	0'

\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the ROW is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accommodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

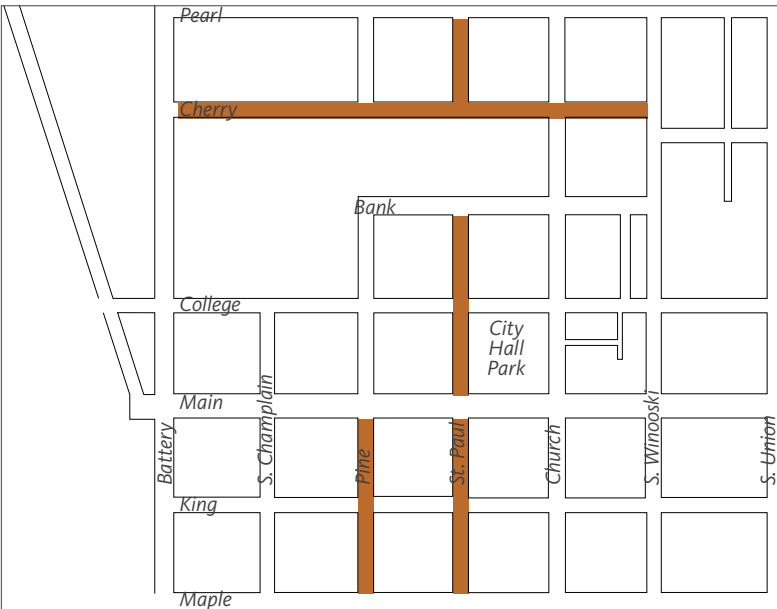
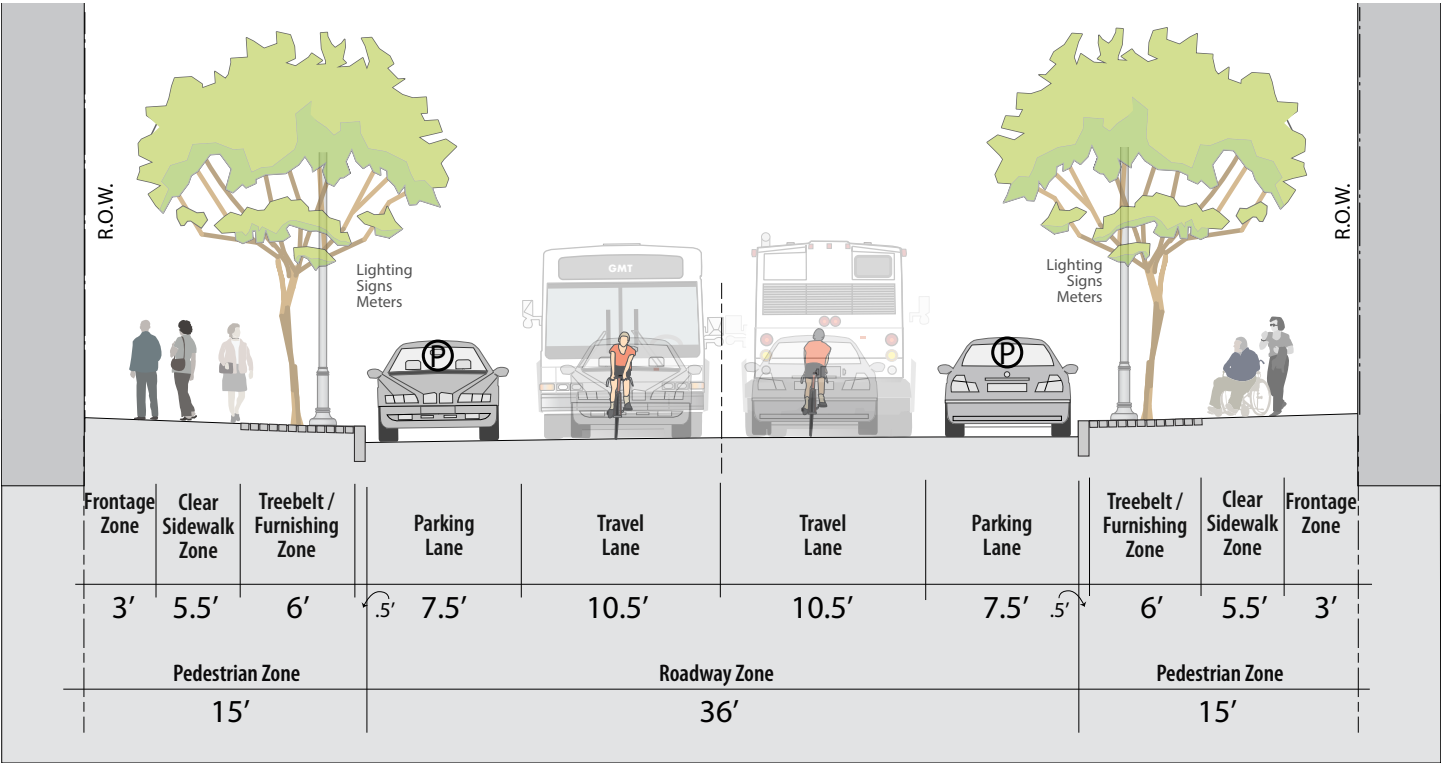
\*\*\* Minimum 1' Frontage Zone required next to built structure.

### General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** private vehicle, bike, ped, local deliveries, limited thru traffic, transit.
- **Typical parking type:** parallel
- **Typical bike facility:** shared right-of-way, except where noted
- **Typical travel lane:** 10' preferred

# Commercial Slow Street with Transit (66' ROW, 36' Roadway)

## 36' Roadway Zone—30' Pedestrian Zone





Roadway Zone Options

Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

*Note: Arrows indicate direction of travel.*

Typical Cross Section				
	Park 7.5'	Travel 10.5'	Travel 10.5'	Park 7.5'
Alternative Options				
	Travel 10.5'	Travel 10.5'	Park 7.5'	Bike 2.5' + 5'
	Travel 10.5'	Travel 10.5'	Bike 2.5' + 5'	Park 7.5'
	4.5'	10.5'	10.5'	10.5' Approaching Intersection

Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.

15FEET					
	Curb	Buffer Zone *	Tree Belt/ Furnishing Zone	Clear Sidewalk Zone **	Frontage Zone ***
Preferred	6"	0'	6'	5.5'	3'
Minimum	6"	0'	6'	5'	0'

\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the ROW is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accomodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

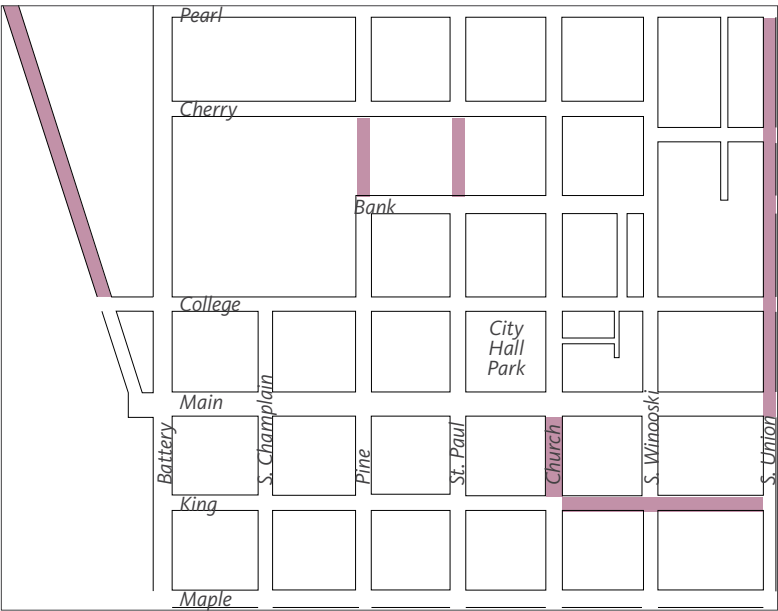
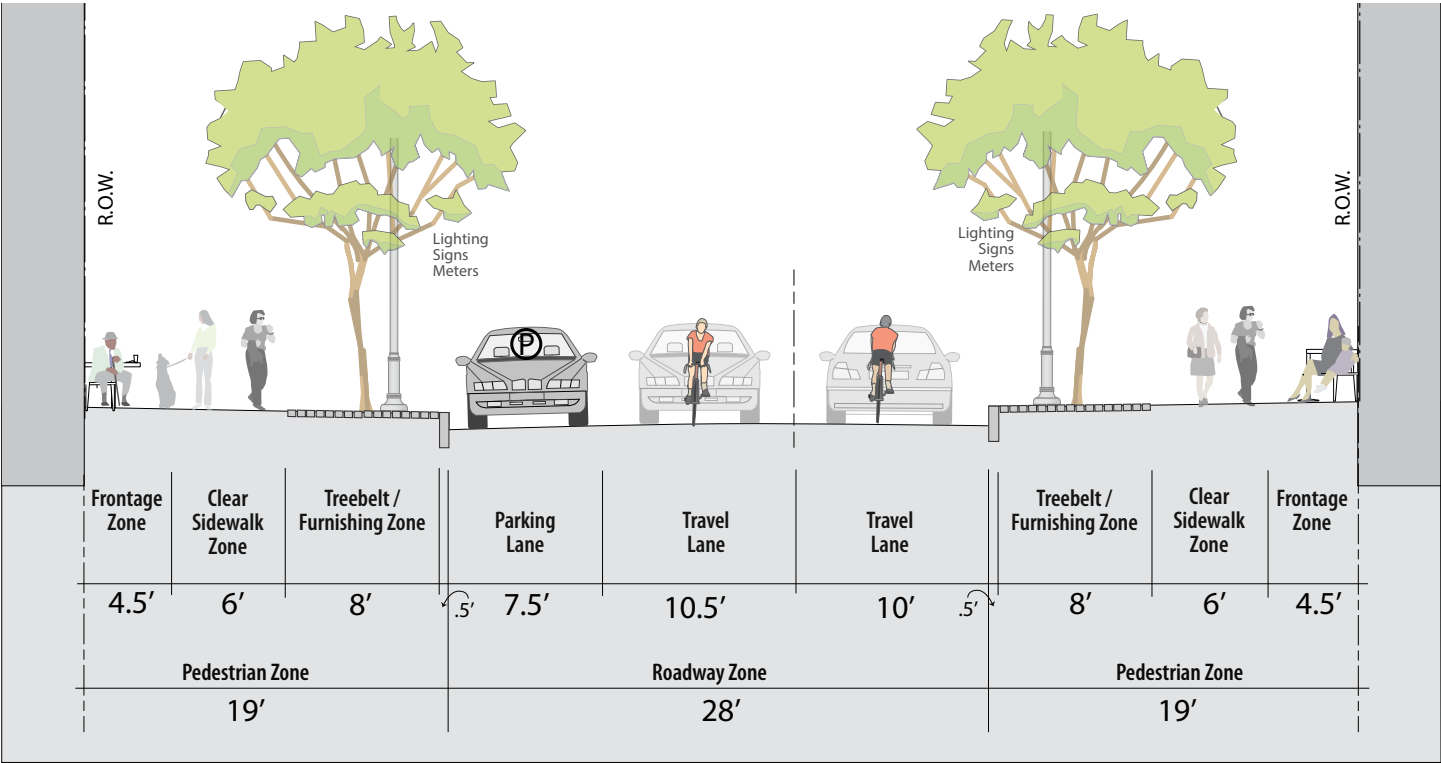
\*\*\* Minimum 1' Frontage Zone required next to built structure.

General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** transit, private vehicle, bike, ped, local deliveries, thru traffic
- **Typical parking type:** parallel
- **Typical bike facility:** shared right-of-way, except where noted
- **Typical travel lane:** 10.5'

# Minimum Commercial Street (66' ROW, 28' Roadway)

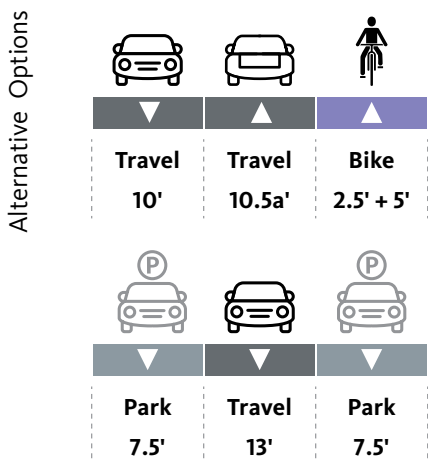
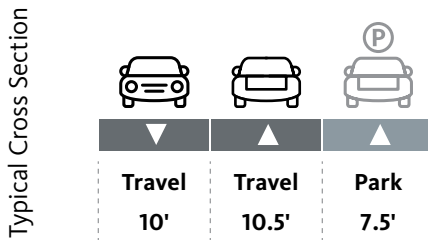
## 28' Roadway Zone—38' Pedestrian Zone



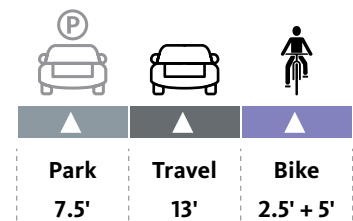
## Roadway Zone Options

Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

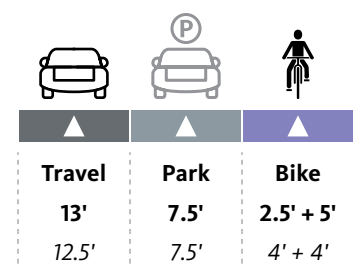
Note: Arrows indicate direction of travel.



Can also accommodate all modes of travel in opposite direction.



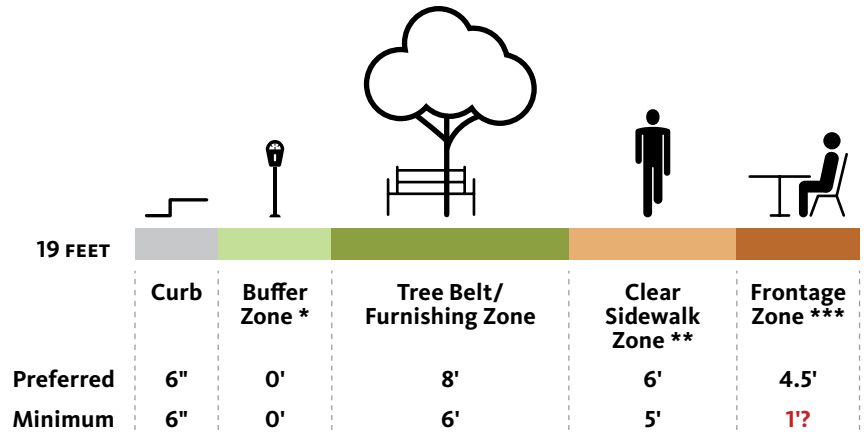
Can also accommodate all modes of travel in opposite direction.



*Italics represent option for two-way bike way with no buffer.*

## Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.



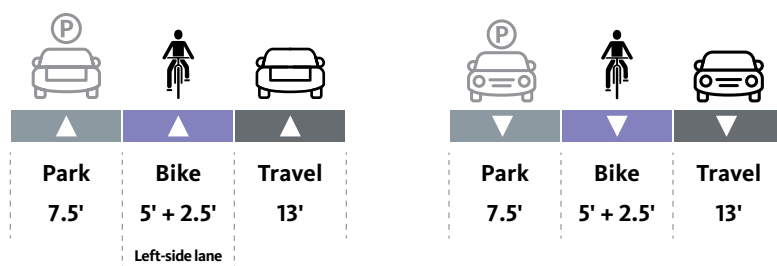
\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the ROW is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accommodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

\*\*\* Minimum 1' Frontage Zone required next to built structure.

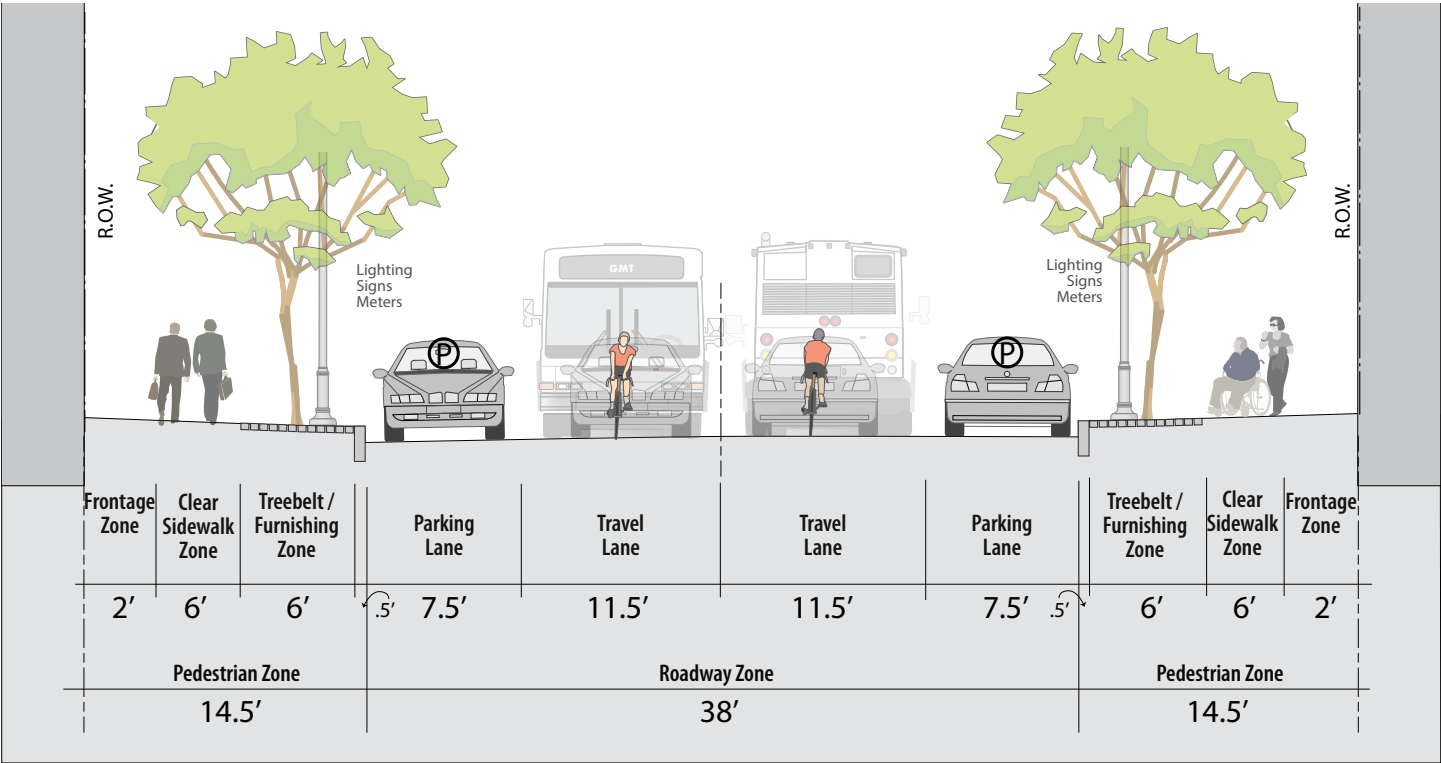
## General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** private vehicle, bike, ped, limited deliveries, thru traffic, limited transit.
- **Typical parking type:** parallel
- **Typical bike facility:** shared right-of-way or separated facility; see street design considerations
- **Typical travel lane:** 10' preferred



# Major Commercial Street (66' ROW, 38' Roadway)

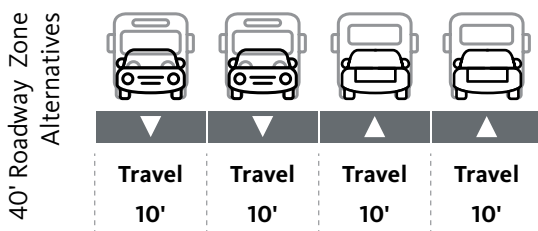
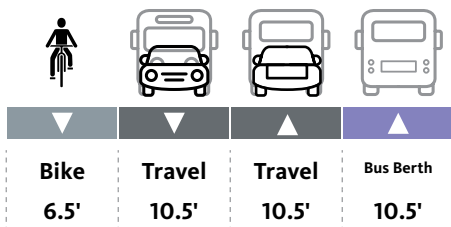
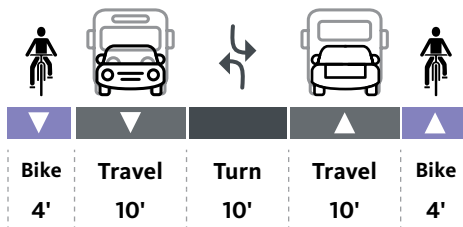
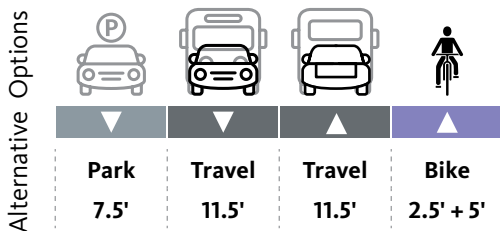
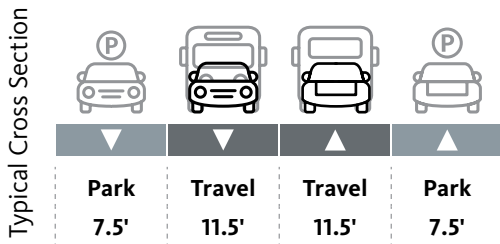
## 38' Roadway Zone—29' Pedestrian Zone



### Roadway Zone Options

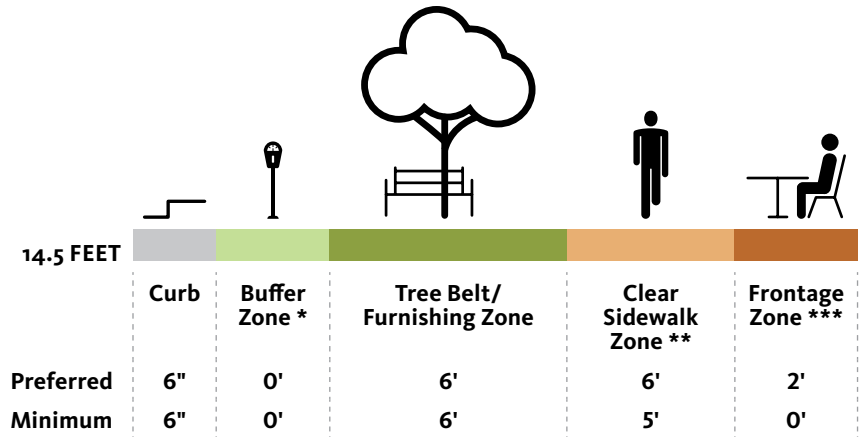
Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

Note: Arrows indicate direction of travel.



### Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.



\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the ROW is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accommodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

\*\*\* Minimum 1' Frontage Zone required next to built structure.

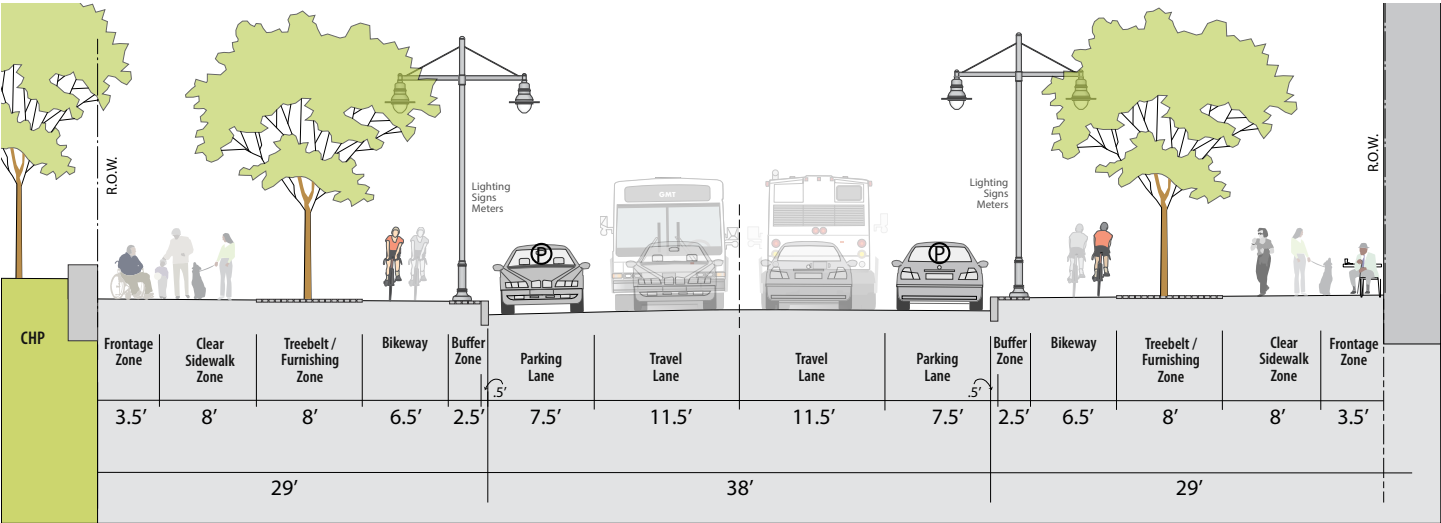
### General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** transit, private vehicle, bike, ped, local deliveries, thru traffic
- **Typical parking type:** parallel
- **Typical bike facility:** separated bike facility per street design considerations
- **Typical travel lane:** 10'-11.5'

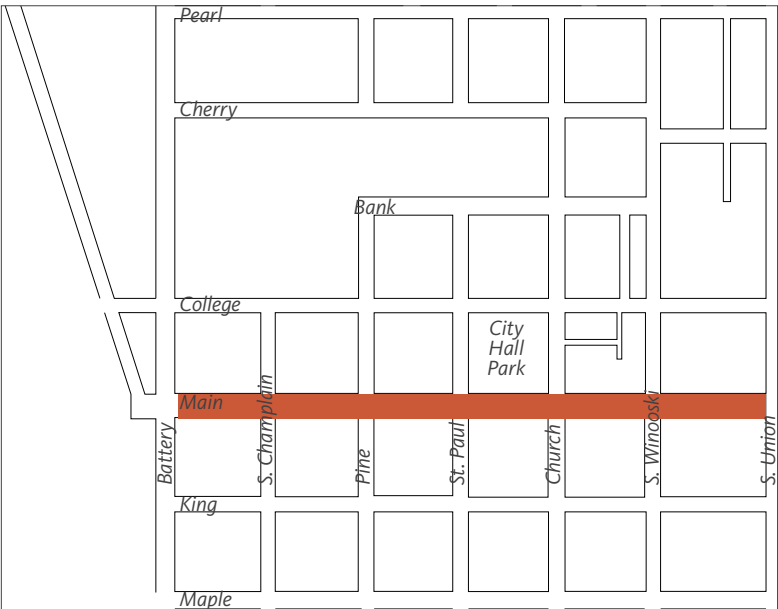
**40' Roadway Zone Alternative:** Pending the outcome of corridor scoping studies for several Major Commercial streets within downtown, it may be necessary to include a Roadway Zone configuration with four travel lanes, or buffered/protected bicycle facilities and parking. For these cases, the Roadway Zone may be widened to 40', which could include the following options:

# Special Commercial Street (99' ROW, 38' Roadway)

## 38' Roadway Zone—58'+ Pedestrian Zone



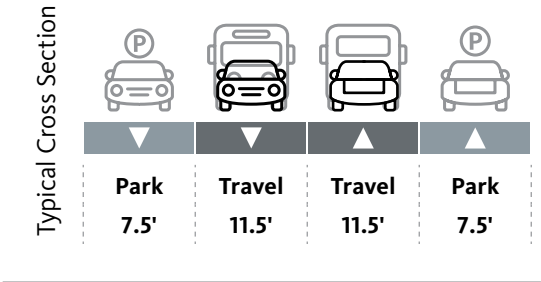
Note: Cross section illustrates Main Street at City Hall Park.



Roadway Zone Options

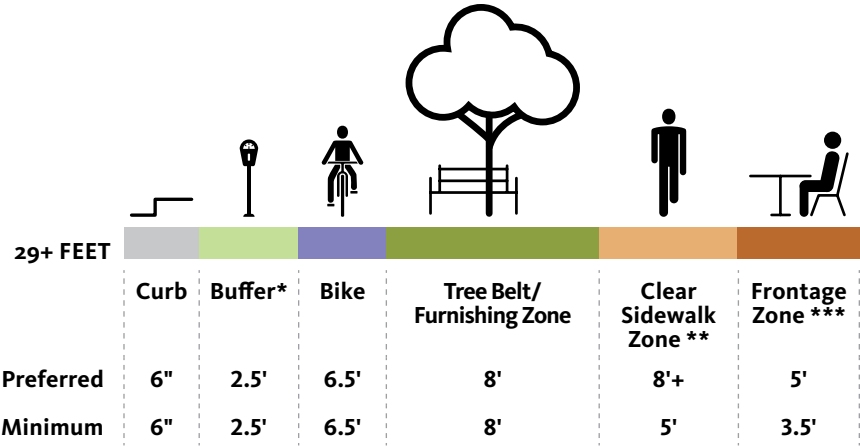
Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

*Note: Arrows indicate direction of travel.*



Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.



\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the row is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accommodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

\*\*\* Minimum 1' Frontage Zone required next to built structure.

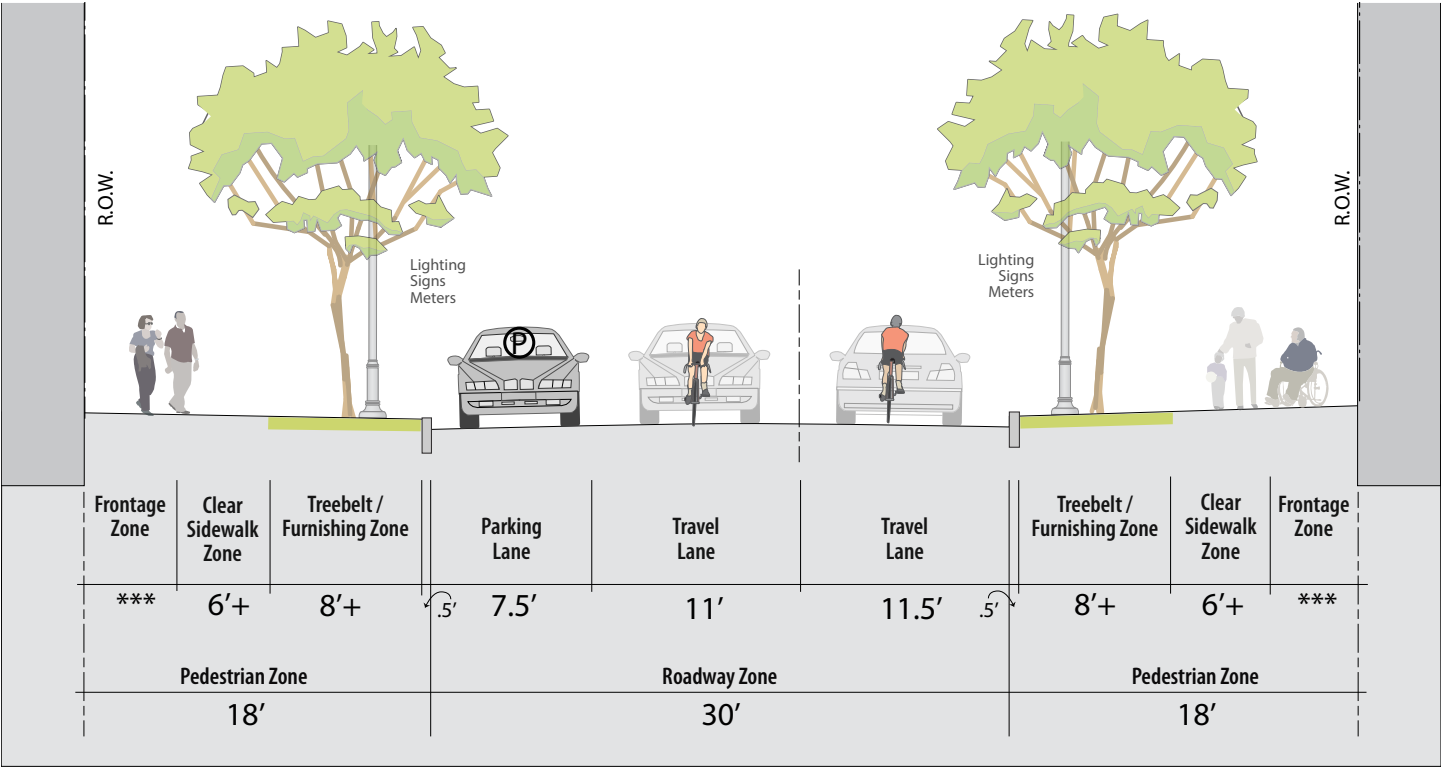
General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** transit, private vehicle, bike, ped, local deliveries, thru traffic.
- **Typical parking type:** parallel
- **Typical bike facility:** raised cycle track
- **Typical travel lane:** 11.5' preferred



# Downtown Residential Street (66' ROW, 30' Roadway)

## 30' Roadway Zone—36' Pedestrian Zone

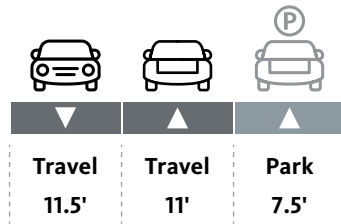


### Roadway Zone Options

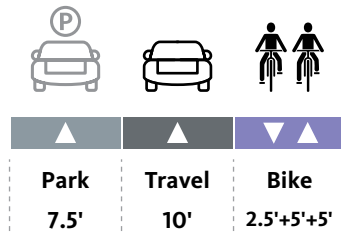
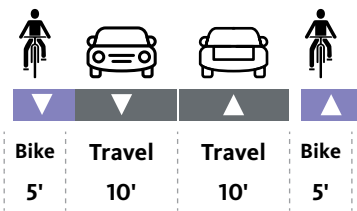
Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

Note: Arrows indicate direction of travel.

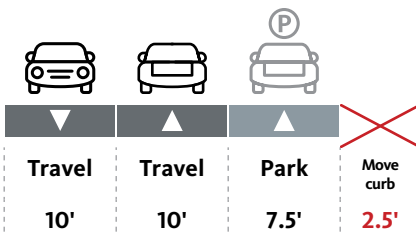
Typical Cross Section



Alternative Options

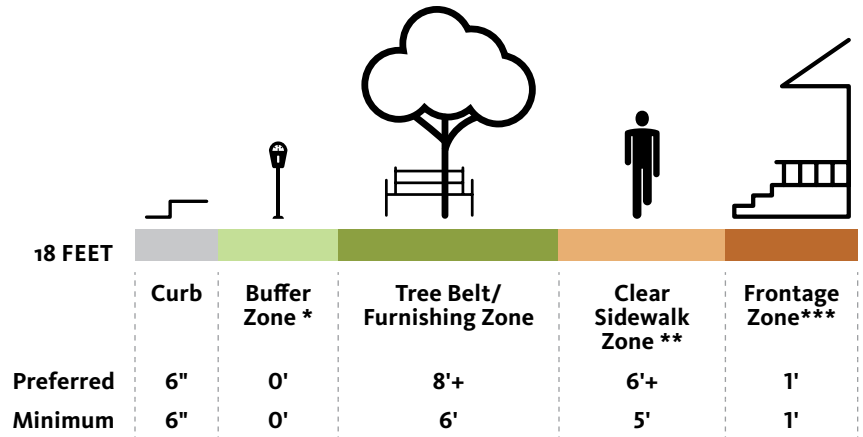


Protected  
2-way bike  
lane



### Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.



\* A 12" buffer is required in addition to the 6" curb, in order to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 12" of the tree belt.

\*\*The Minimum Clear Sidewalk Zone dimension is the most critical dimension to be maintained when the ROW is constrained. In extremely constrained environments, the placement of elements within the Tree Belt/Furnishing Zone may allow for a portion of this zone to be utilized to accommodate the minimum clear sidewalk dimension. ADA minimum walkway standards may be applied only upon approval of the City Engineer.

\*\*\* Minimum 1' Frontage Zone required next to built structure. If Frontage Zone is occupied by turf, maintain 1' on back of sidewalk for repairing/replacing sidewalks.

### General Notes

- **Design speed:** ≤ 20 MPH
- **Traffic types:** private vehicle, bike, ped, local deliveries, thru traffic, limited transit.
- **Typical parking type:** parallel
- **Typical bike facility:** shared right-of-way, except where noted
- **Typical travel lane:** 11'

Additional Options: See the Stormwater Toolkit for "[Roadway Zone](#)" on [page 218](#) for additional Roadway Zone Options, particularly when the opportunity to reduce the Roadway width is available. (See diagram below.)

# Street & Intersection Assemblies

## Assembling Great Streets

33% of the land area within downtown Burlington is made up of public rights-of-way. Streets and sidewalks are truly public space. They are the paths that everyone travels, the place in the city where everyone comes together, where people see and talk to each other. The organization and placement of elements within this public space should reinforce these characteristics and reflect that streets are an important space in the city.

The goal of this section is to illustrate how all streetscape improvements, large or small, contribute to the creation of consistent, vibrant, livable, and walkable streetscapes when placed appropriately. While each streetscape element has its own specific recommendations, this section includes general placement guidelines to ensure a consistent character and quality of streets, especially with regard to the requirements of the Americans with Disabilities Act (ADA).

The illustrations on the following pages should inform the selection of elements that are to be located on commercial

or residential streets, and where those elements should appear within the block (mid-block or at an intersection). It should be noted that not every streetscape element is appropriate for every street. Indeed, these elements should be located appropriate to the scale, character, and function of a particular street.

While certain elements, such as paving or tree species, will tend to be applied consistently along a street, others (benches and info kiosks for example) may be applied only in areas with more concentrated pedestrian activity or key destinations. In some cases, custom elements (art driven efforts, for example) may be considered to create a distinctive treatment. Otherwise, the elements specified here provide the flexibility to respond to a range of contexts while ensuring a consistent design vocabulary for downtown.

Detailed considerations for placement of these elements within the ROW are located in *"Standard Dimensions & Siting Considerations"* on page 96 and should be consulted in conjunction with these illustrations. Specific streetscape standard elements can be found in the *"Materials & Furnishings Palette"* on page 269 and in *Appendix section A-8*.



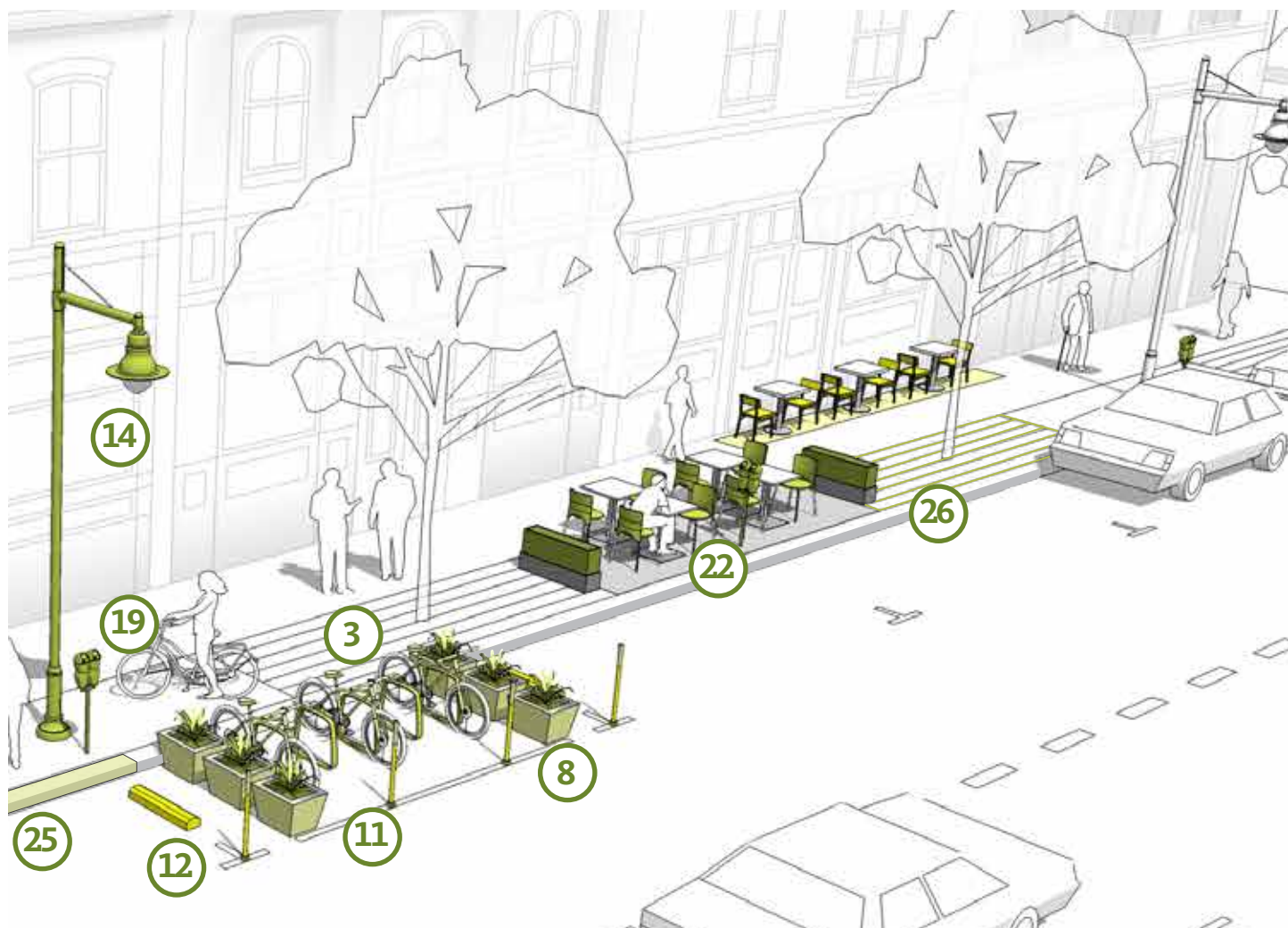
Streetscape on Campus Pkwy. at University of Washington in Seattle, WA. (Photo credit Justin Martin—<http://flic.kr/p/rktyLR>)

## Commercial Street within 66' ROW

### MIDBLOCK ASSEMBLIES







**1** "Benches" on page 288

**2** "Bike Rack" on page 294

**3** "High-Capacity Bike Parking" on page 296

**8** "Planters" on page 301

**10** "Trash/Recycling" on page 303

**11** "Safe Hit Posts" page 298

**12** "Wheel Stops" on page 298

**14** "Street Lights" on page 262

**19** "Parking Meters" on page 311

**22** "Outdoor Dining" page 120

**23** "Street Trees" on page 172

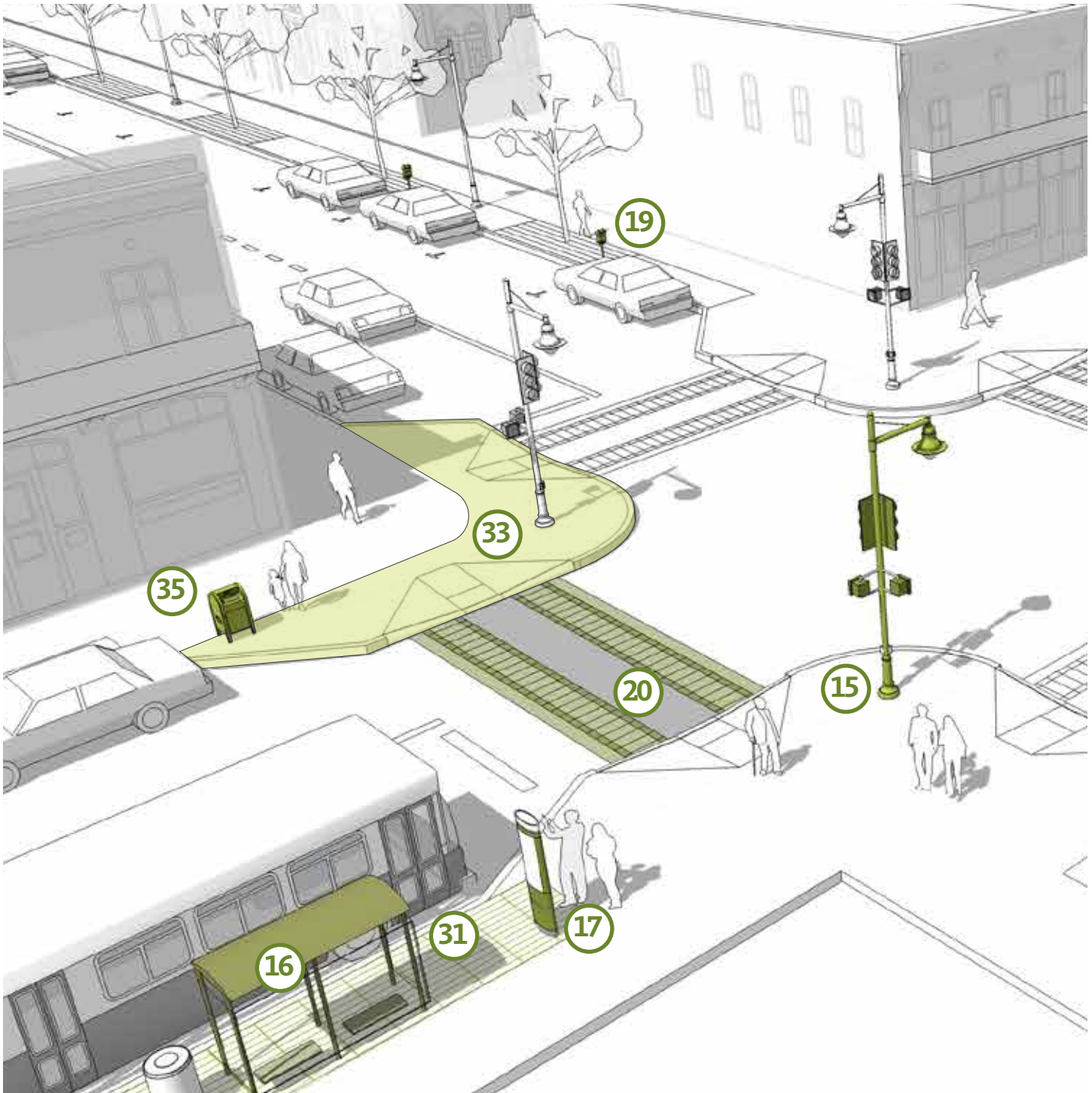
**25** "Granite Curbs" on page 276

**26** "Tree well grates & guards" on page 307

**28** "Tree belt planter" on page 185

**29** "Tree Belt Permeable Pavers" on page 277

*Click on these links to navigate directly to details for these elements.*

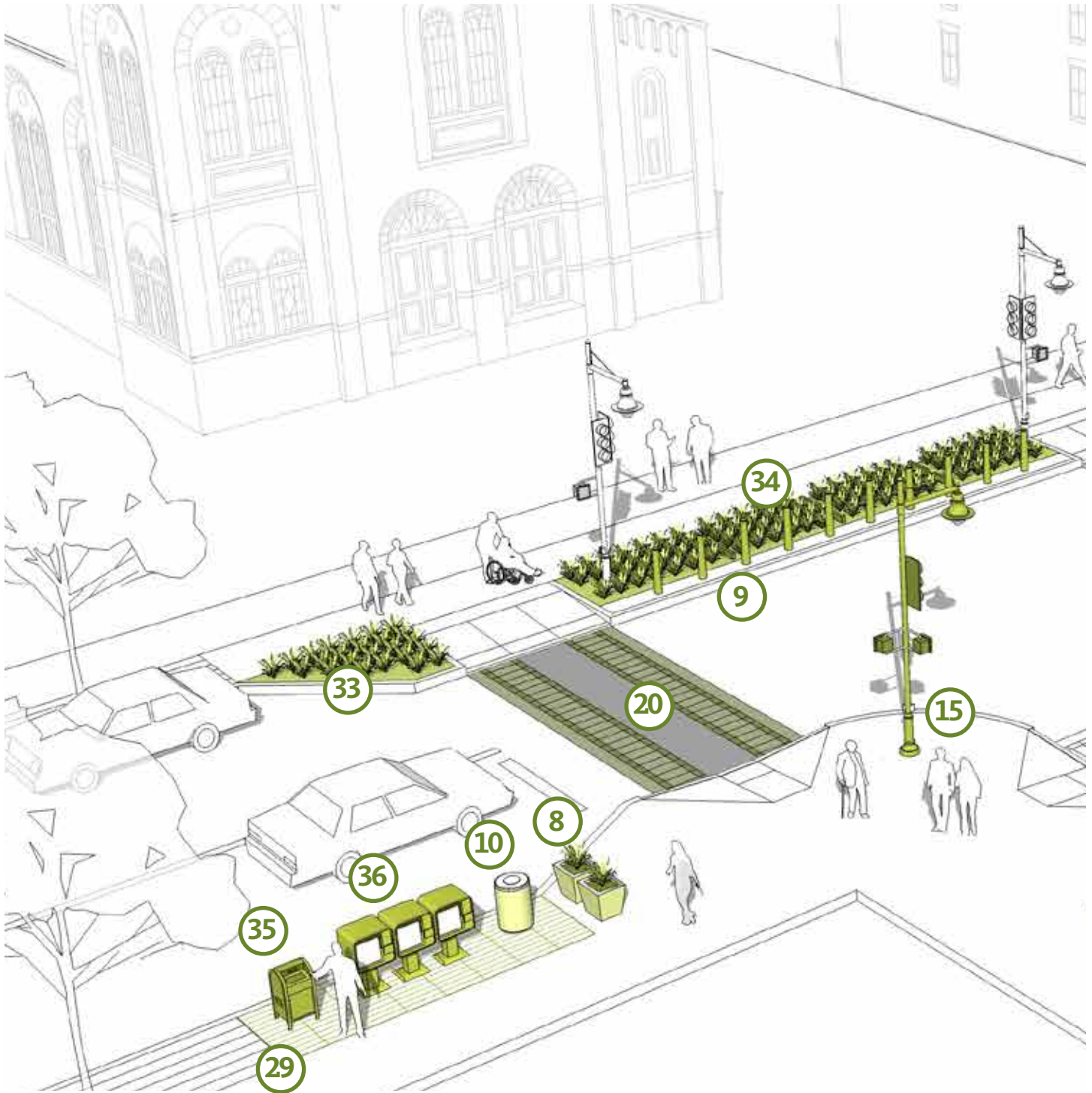
**Commercial Street with 66' ROW****CROSS INTERSECTION**



- |           |  |           |   |
|-----------|--|-----------|---|
| <b>1</b>  | <i>"Benches" on page 288</i>                         | <b>22</b> | <i>"Outdoor Dining" page 120</i>                |
| <b>2</b>  | <i>"Bike Rack" on page 294</i>                       | <b>23</b> | <i>"Street Trees" on page 172</i>               |
| <b>10</b> | <i>"Trash/Recycling" on page 303</i>                 | <b>25</b> | <i>"Granite Curbs" on page 276</i>              |
| <b>15</b> | <i>"Street &amp; Traffic Lighting" on a page 312</i> | <b>31</b> | <i>"Tree Belt Permeable Pavers" on page 277</i> |
| <b>16</b> | <i>"Bus Shelter" on page 310</i>                     | <b>33</b> | <i>"Bumpouts" on page 126</i>                   |
| <b>17</b> | <i>"Map Kiosk" on page 316</i>                       | <b>34</b> | <i>"Rain Gardens" on page 226</i>               |
| <b>19</b> | <i>"Parking Meters" on page 311</i>                  | <b>35</b> | <i>Mailbox</i>                                  |
| <b>20</b> | <i>"Crosswalks" on page 280</i>                      | <b>36</b> | <i>News rack</i>                                |

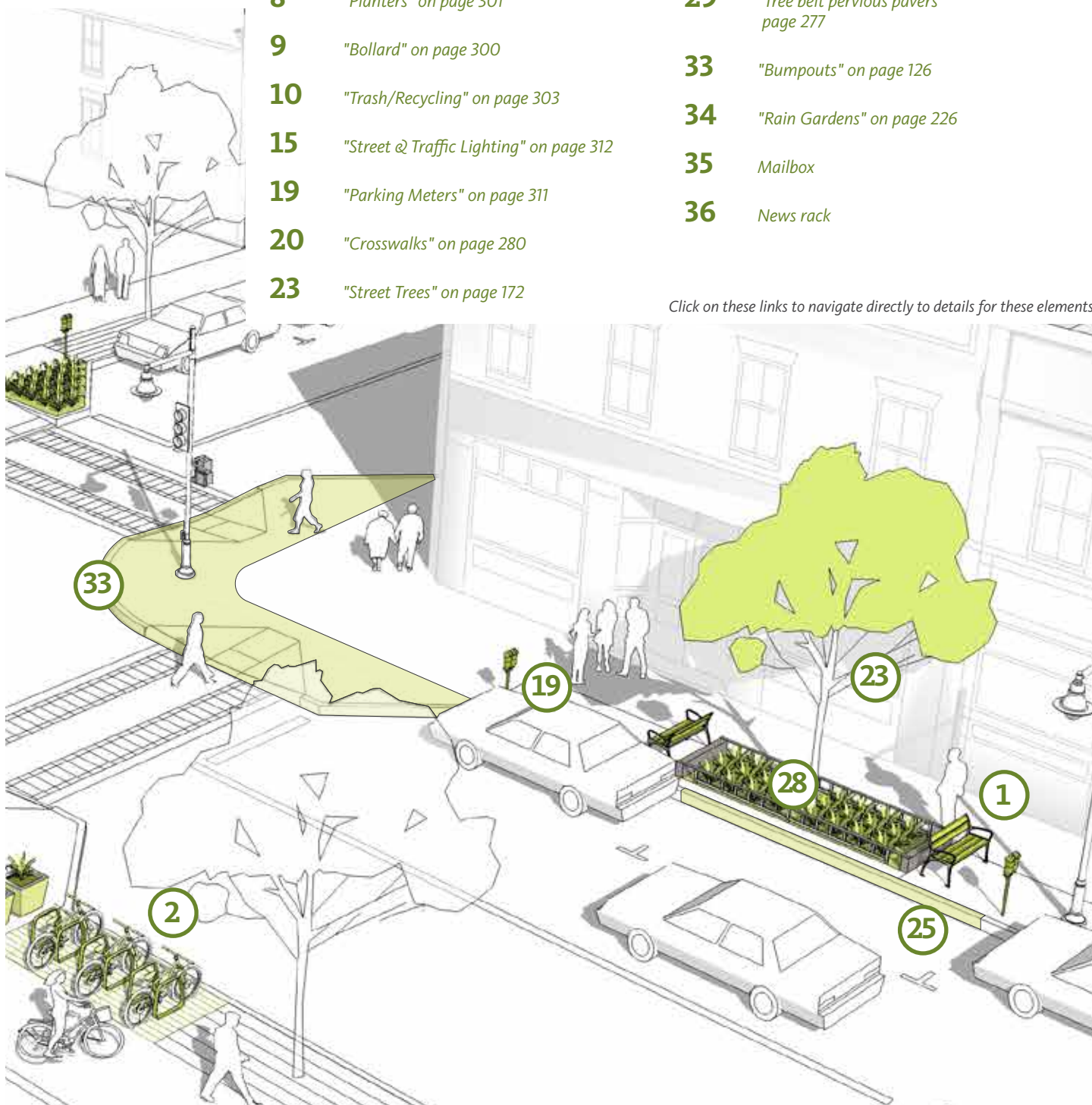
*Click on these links to navigate directly to details for these elements.*



**Commercial Streets with 66' ROW****"T" INTERSECTION**

- |           |   |           |                                      |
|-----------|---|-----------|--------------------------------------|
| <b>1</b>  | "Benches" on page 288                   | <b>25</b> | "Granite Curbs" on page 276          |
| <b>2</b>  | "Bike Rack" on page 294                 | <b>28</b> | "Tree belt planter" page 176         |
| <b>8</b>  | "Planters" on page 301                  | <b>29</b> | "Tree belt pervious pavers" page 277 |
| <b>9</b>  | "Bollard" on page 300                   | <b>33</b> | "Bumpouts" on page 126               |
| <b>10</b> | "Trash/Recycling" on page 303           | <b>34</b> | "Rain Gardens" on page 226           |
| <b>15</b> | "Street & Traffic Lighting" on page 312 | <b>35</b> | Mailbox                              |
| <b>19</b> | "Parking Meters" on page 311            | <b>36</b> | News rack                            |
| <b>20</b> | "Crosswalks" on page 280                |           |                                      |
| <b>23</b> | "Street Trees" on page 172              |           |                                      |

Click on these links to navigate directly to details for these elements.

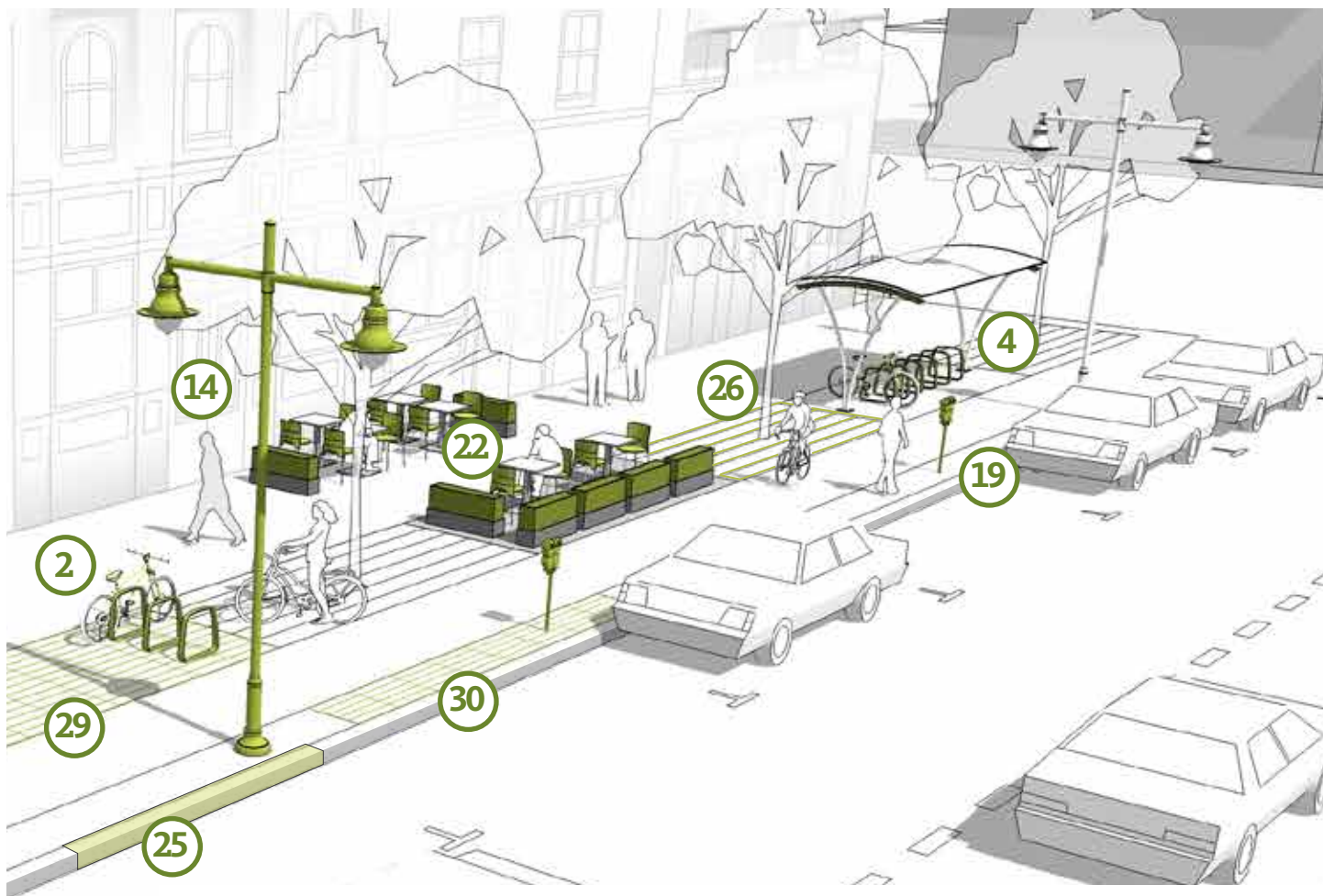




## Commercial Street with 99' ROW

### MIDBLOCK





**1** "Benches" on page 288

**2** "Bike Rack" on page 294

**4** "Bike Shelter" on page 297

**7** "Protected Bicycle Lane" on page 145

**8** "Planters" on page 301

**10** "Trash/Recycling" on page 303

**14** "Street Lights" on page 262

**19** "Parking Meters" on page 311

**22** "Outdoor Dining" page 120

**23** "Street Trees" on page 172

**25** "Granite Curbs" on page 276

**26** "Tree well grates & guards" on page 307

**28** "Tree belt planter" page 176

**29** "Permeable Pavers" on page 277

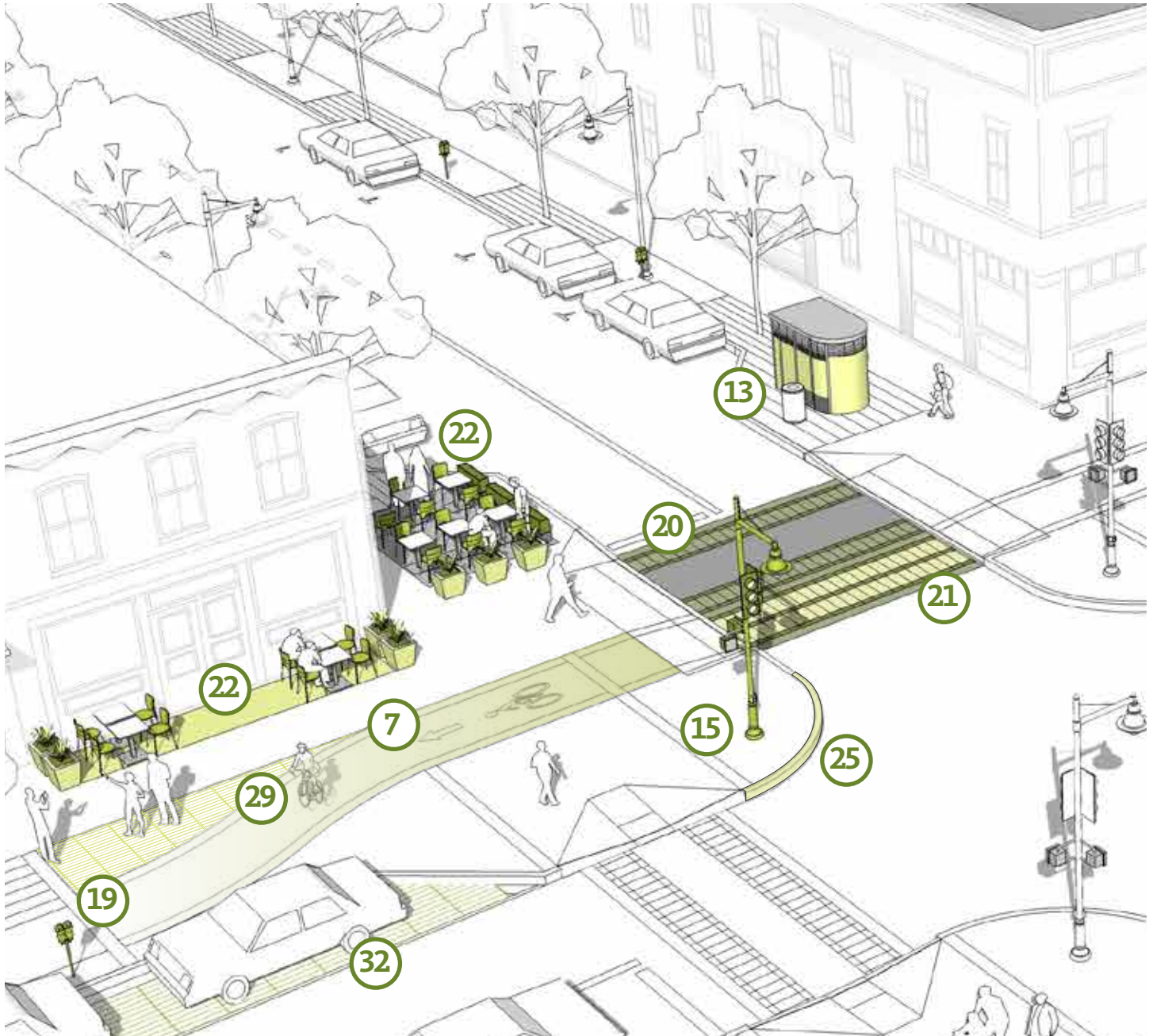
**30** "Permeable Pavers" on page 277

**32** "Parking Lane Permeable Pavers" on page 275

**37** "Vendor Carts" on page 117

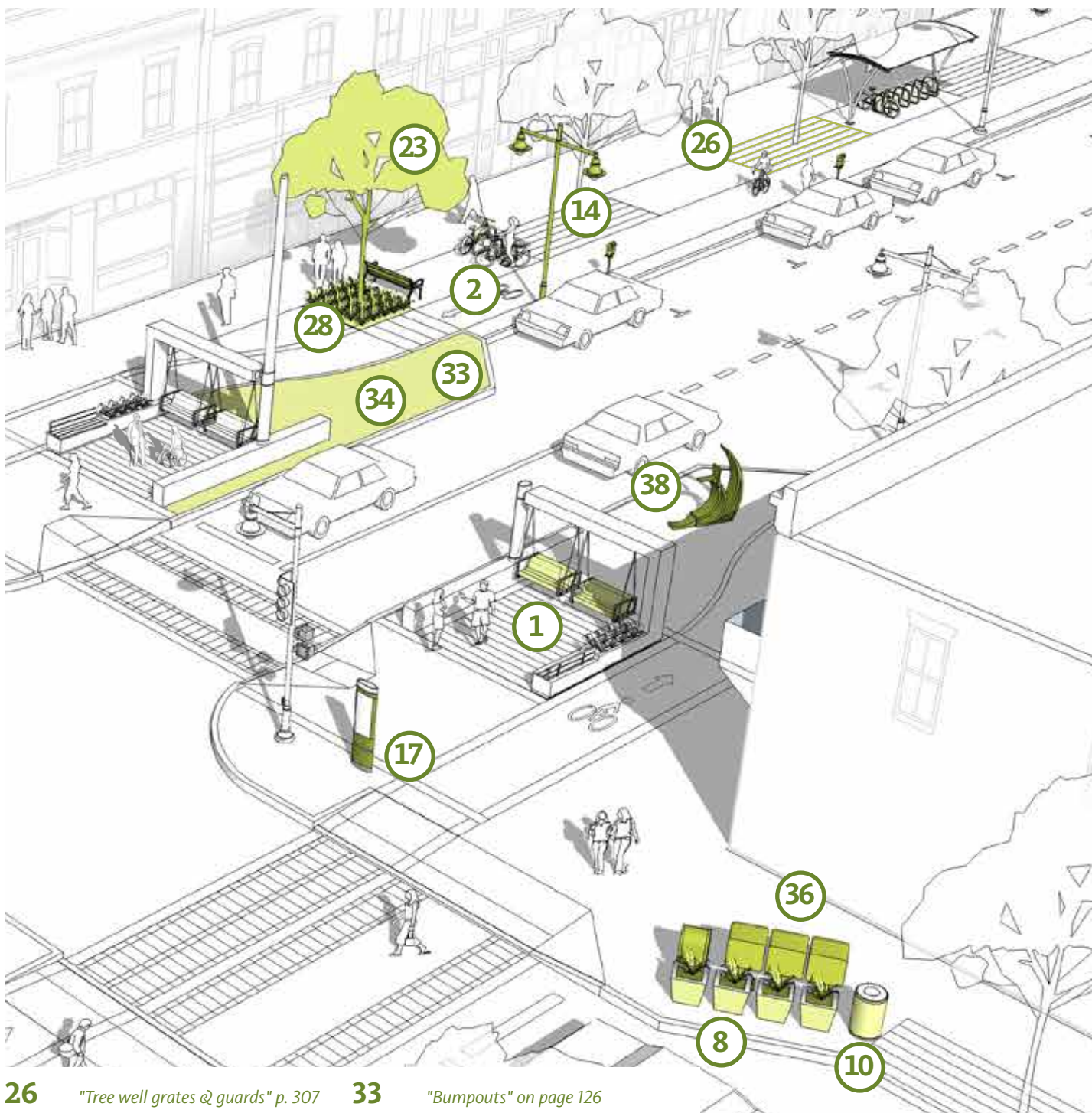
Click on these links to navigate directly to details for these elements.

## CROSS INTERSECTION



- |           |                               |           |   |           |                              |
|-----------|-------------------------------|-----------|---|-----------|------------------------------|
| <b>1</b>  | "Benches" on page 288         | <b>13</b> | "Public Toilets" on page 305            | <b>20</b> | "Crosswalks" on page 280     |
| <b>2</b>  | "Bike Rack" on page 294       | <b>14</b> | "Street Lights" on page 262             | <b>21</b> | "Blke Crossking" on page 149 |
| <b>7</b>  |                               | <b>15</b> | "Street & Traffic Lighting" on page 312 | <b>22</b> | "Outdoor Dining" page 120    |
| <b>8</b>  | "Planters" on page 301        | <b>17</b> | "Map Kiosk" on page 316                 | <b>23</b> | "Street Trees" on page 172   |
| <b>10</b> | "Trash/Recycling" on page 303 | <b>19</b> | "Parking Meters" on page 311            | <b>25</b> | "Granite Curbs" on page 276  |





**26** "Tree well grates & guards" p. 307

**28** "Tree belt planter" page 186

**29** "Tree belt Permeable Pavers" p. 277

**32** "Parking Lane Permeable Pavers" on page 275

**33** "Bumpouts" on page 126

**34** "Rain Gardens" on page 226

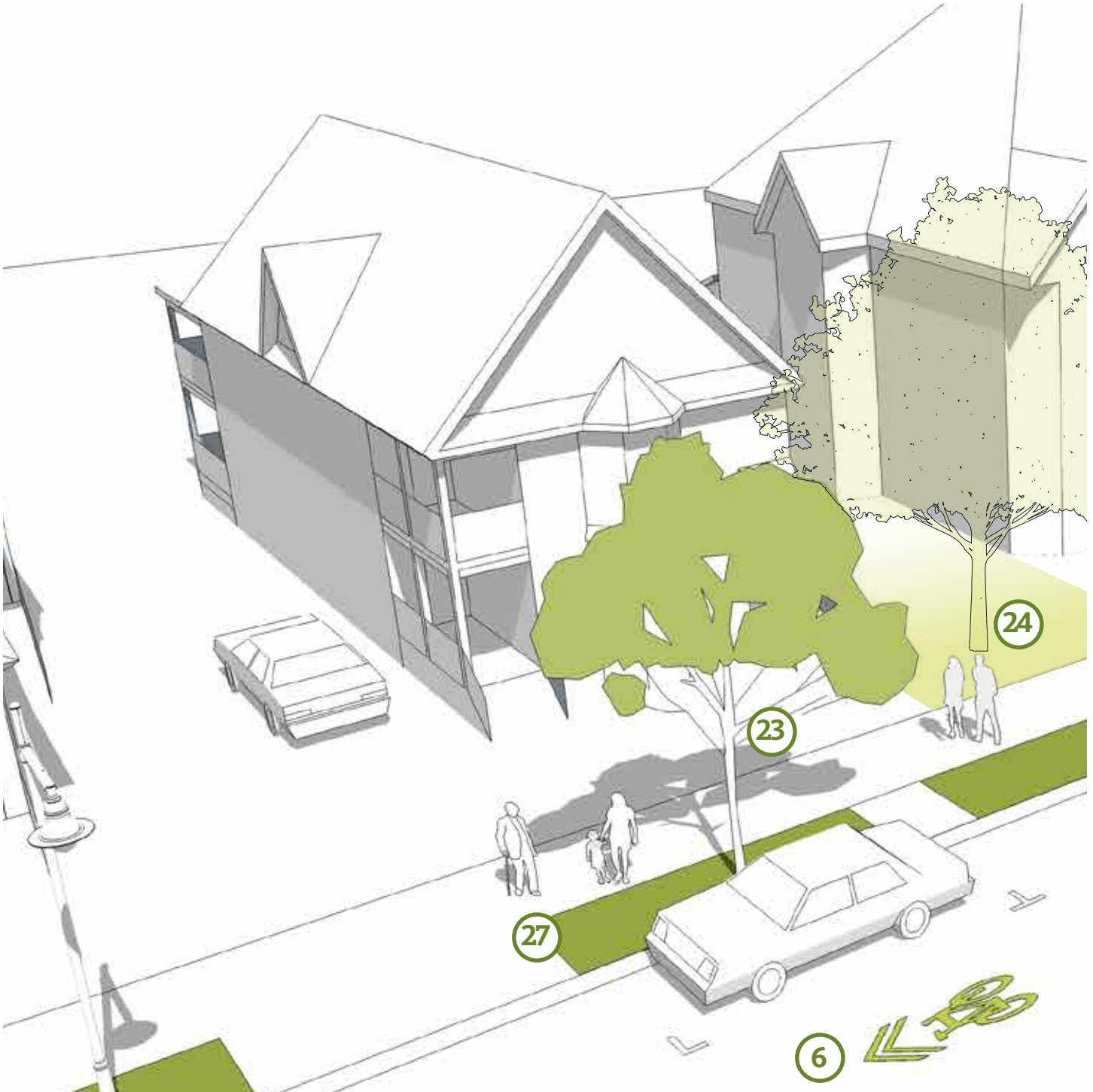
**36** "Newsrack" on page 304

Click on these links to navigate directly to details for these elements.



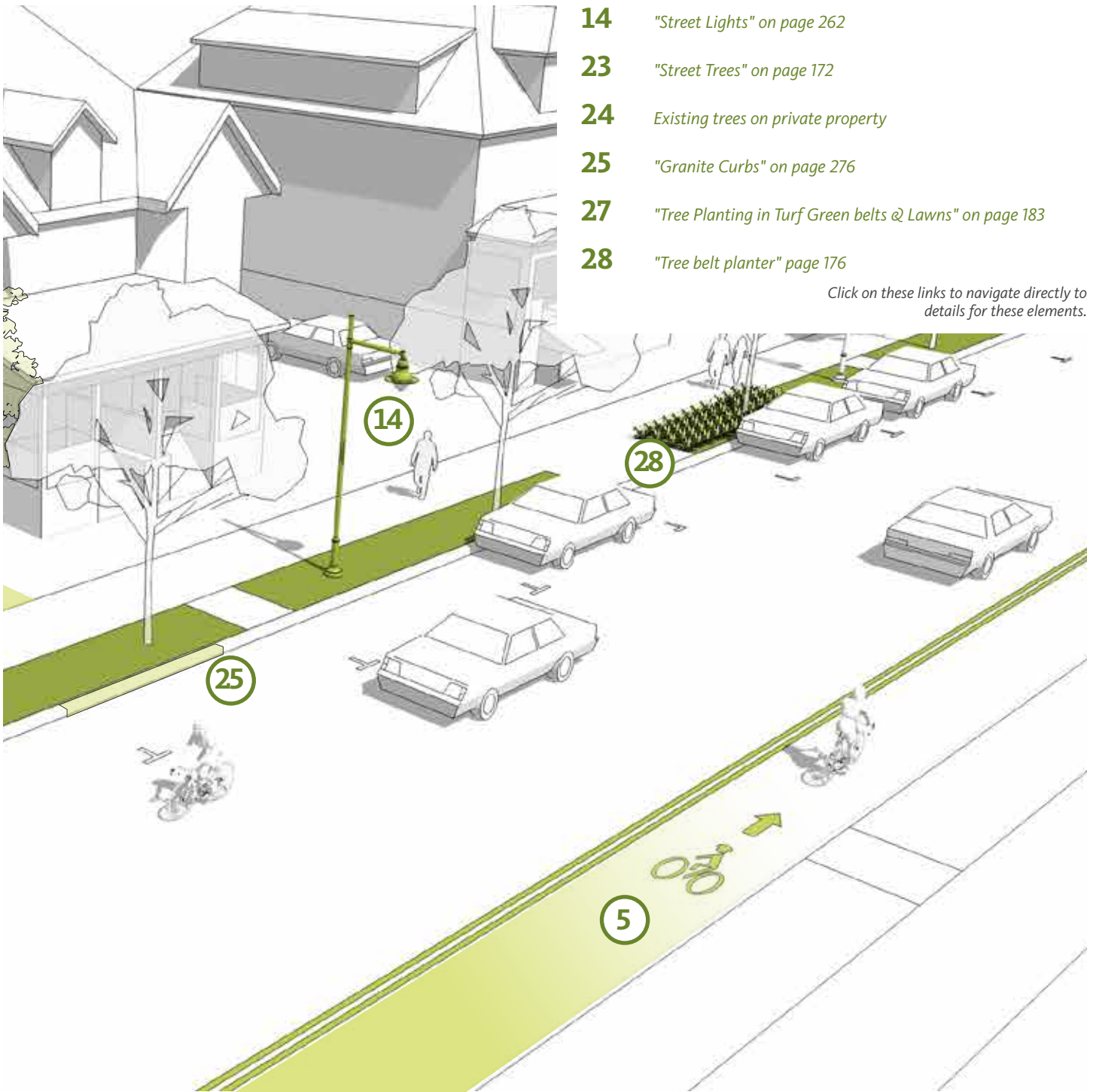
## Residential Streets with 66' ROW

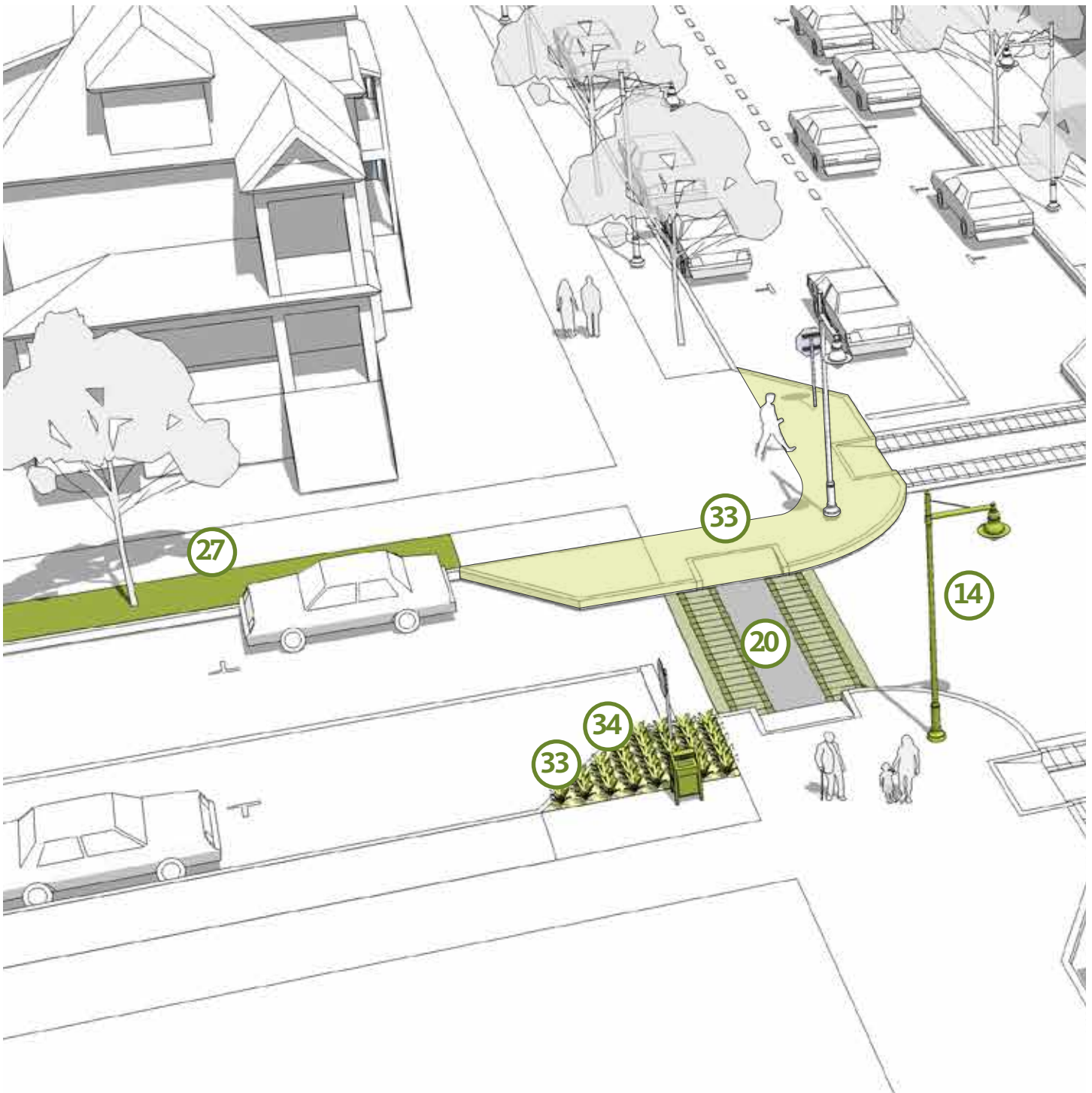
### MIDBLOCK



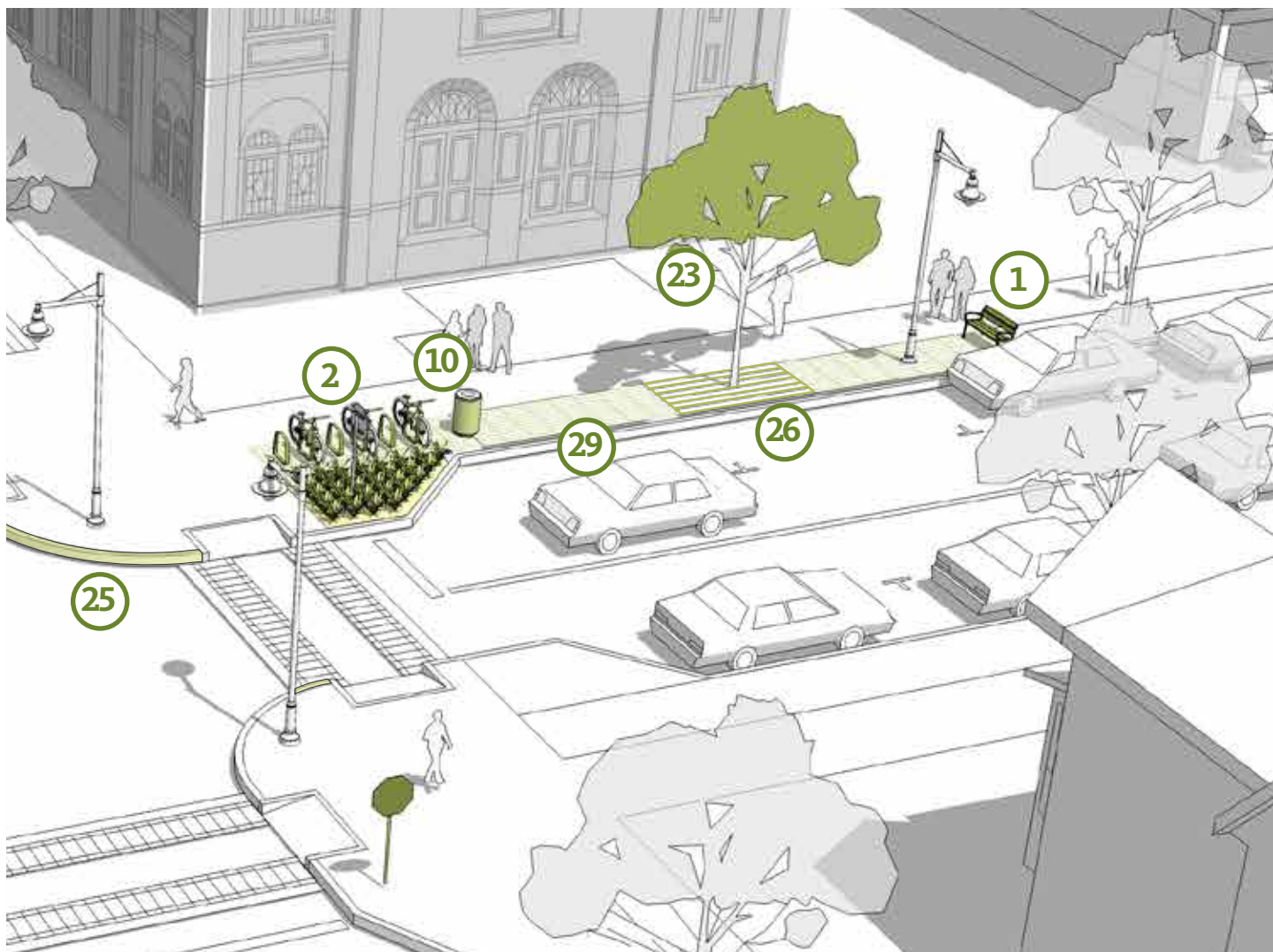
- 5** "Bike Lane" on page 142
- 6** "Shared Lane" on page 141
- 14** "Street Lights" on page 262
- 23** "Street Trees" on page 172
- 24** Existing trees on private property
- 25** "Granite Curbs" on page 276
- 27** "Tree Planting in Turf Green belts & Lawns" on page 183
- 28** "Tree belt planter" page 176

Click on these links to navigate directly to details for these elements.



**Residential Streets with 66' ROW****CROSS INTERSECTION**





- 1** "Benches" on page 288
- 2** "Bike Rack" on page 294
- 10** "Trash/Recycling" on page 303
- 14** "Street Lights" on page 262
- 20** "Crosswalks" on page 280
- 23** "Street Trees" on page 172
- 25** "Granite Curbs" on page 276

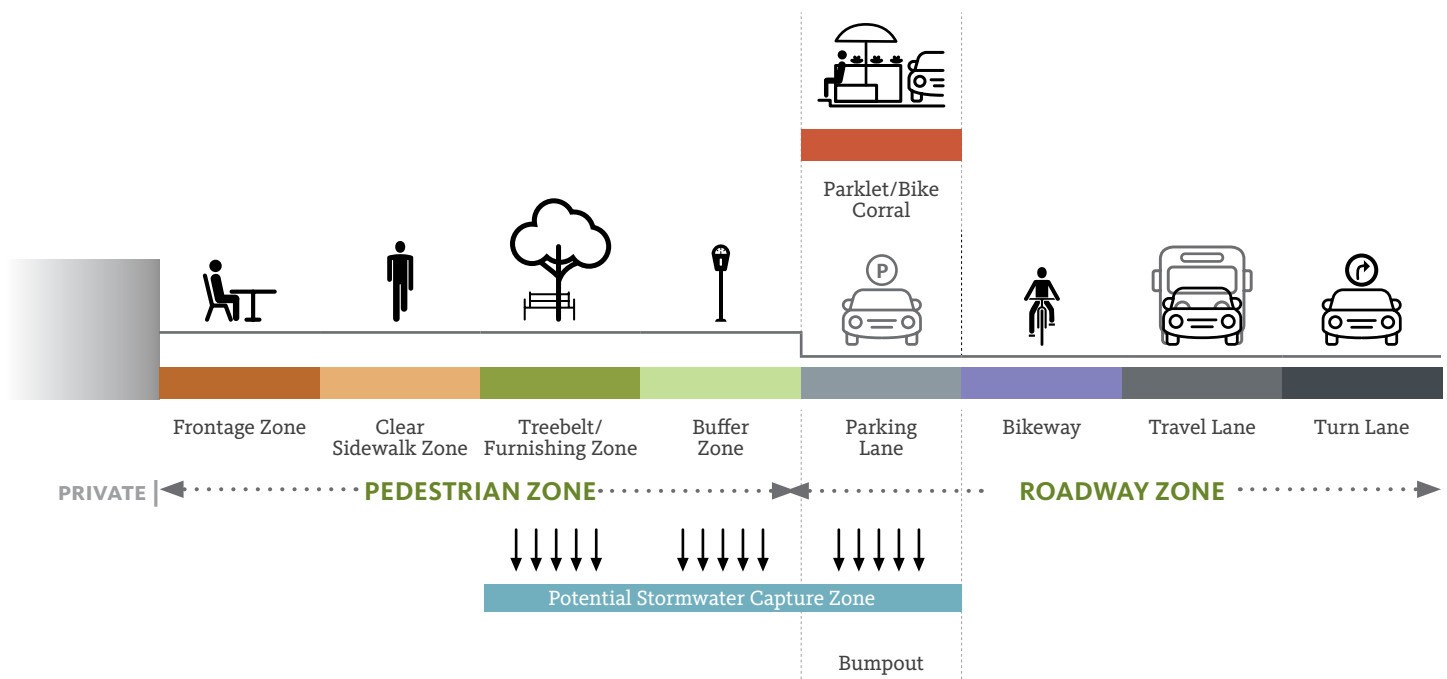
- 26** "Tree well grates & guards" on page 307
- 27** "Tree Planting in Turf Green belts & Lawns" on page 183
- 29** "Tree Belt Permeable Pavers" on page 277
- 33** "Bumpouts" on page 126
- 34** "Rain Gardens" on page 226

*Click on these links to navigate directly to details for these elements.*

# Standard Dimensions & Siting Considerations

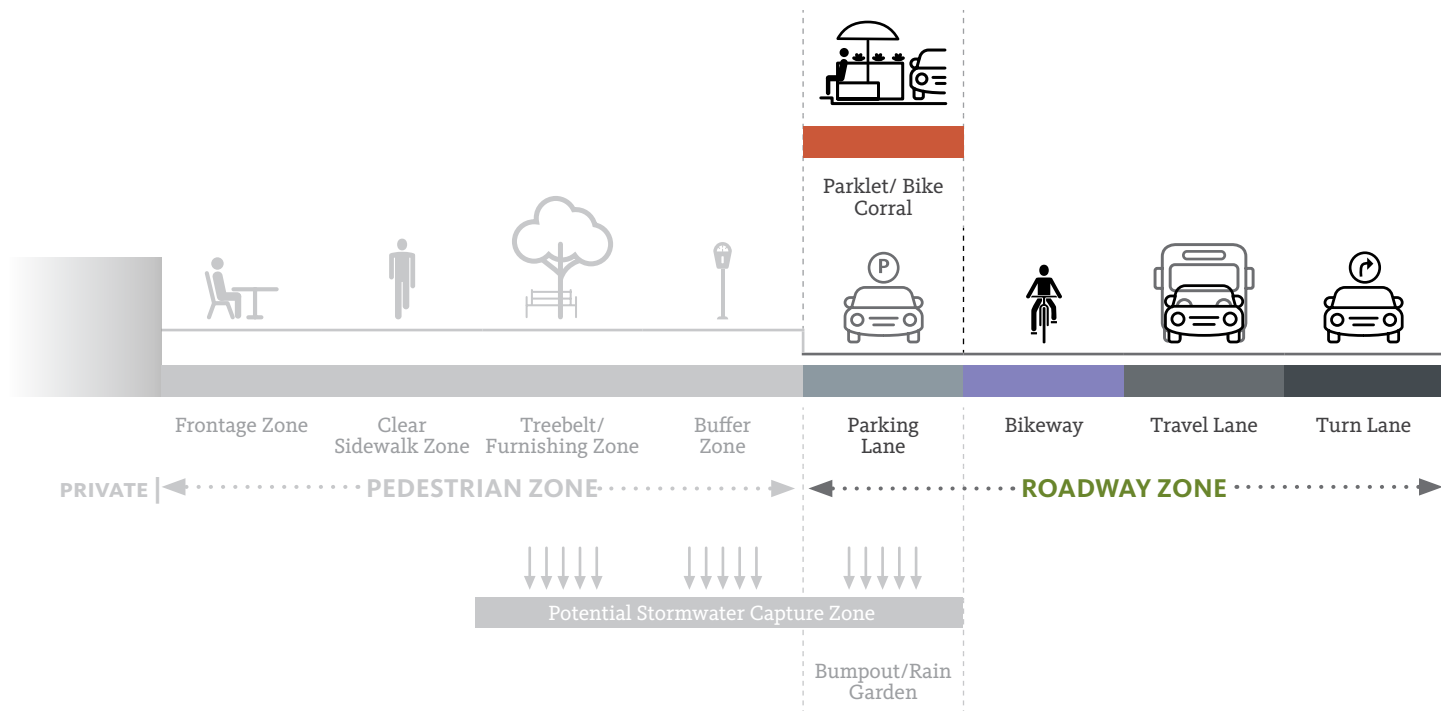
## Standards for Laneways and Elements

This section provides the requirements for dimensions and siting of elements within the downtown rights-of-way. This includes minimum, maximum, and/or preferred dimensions for zones located within the Roadway and Pedestrian Zones, requirements for carrying these zones through intersections, and separation and placement requirements for individual elements within the right-of-way. This section should be consulted after the Street Type and Roadway and Pedestrian Zone options have been selected for a project to ensure that all applicable local, state and federal standards are met. Additionally, this section should inform the "fit up" of the streetscape as individual elements are selected and located in the design process.



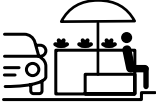







# Roadway Zones

This zone is dedicated primarily to the movement of personal, delivery, and transit vehicles and bicycles in a way that is physically separated from pedestrians. The following Roadway Zone standard dimensions are critical to ensuring that the City is meeting all state and federal requirements for vehicular transportation routes, and appropriately designing streets to meet current and anticipated traffic volumes, types, speed, and design speed. While the street design hierarchy prioritizes pedestrians, the dimensions begin with roadway zones because these lanes have the least flexibility in order to meet minimum spacing requirements.





Zone	Dimensions	Considerations	Add'l Info
<b>Parking Lane</b>    	<p>Parallel Parking: 7.5' x 20'</p> <p>Angled Parking: 9' x 18' (length measured perpendicular to curb when stall is at 60 deg. angle)</p>	<ul style="list-style-type: none"> <li>Per City Ordinance, no parking is permitted within 50' of the corner of an intersection, unless determined by a professional engineer that sight triangles for both vehicles and pedestrians can be maintained, then the 50' may be reduced, but at no time shall be less than: <ul style="list-style-type: none"> <li>A 20' minimum no parking zone should be established from a crosswalk to the first parking stall at uncontrolled intersections where no bumpout exists for the crosswalk, or on the uncontrolled street of a signalized intersection with a flashing operation.</li> <li>A 10' minimum no parking zone should be established from a crosswalk to the first parking stall at uncontrolled intersections when the crosswalk is protect by a bumpout, on the minor street of a stop controlled intersection or signalized intersection with a flashing operation, and at a multi-way stop controll intersection.</li> </ul> </li> <li>Motorcycle and scooter parking may be located at the end of a block where the size and profile allows site distances to be maintained.</li> <li>It is recommended to utilize parallel parking where on-street parking is included within a street's design; however, if angled parking is determined to be most suitable for a street's design goals, that parking should meet the 60 deg. angle dimensions.</li> </ul> <p><b>VTrans ref. dwg. Standard E-193 Pavement Marking Details Parking Stall Markings Section 3B.19</b></p>	<p><i>App. A-1</i></p>
<b>Parking Zone Placemaking Options</b>    	<p>6' x 12' (1 parking stall)</p> <p>6' x 32' (2 parking stalls)</p>	<ul style="list-style-type: none"> <li>Parklets and bike corrals shall be immovable once placed, but capable of being removed and stored during winter months or when required by request of City.</li> <li>Parklets are permitted on streets with design speeds of 20 MPH or less per the guidance on <a href="#">page 127</a>. Greater separation and/or more intensive buffer elements may be required by the City Engineer for streets with high traffic volumes or high volumes of heavy vehicles.</li> <li>In general, parklets should be located at least one parking space away from an intersection or street corner, 4' from an adjacent parking stall, and 1'-2' from an adjacent travel lane.</li> <li>Parklets and bike corrals are sited along the curb line on streets where on-street parking spaces exist. They can be considered in any location where there are or would be space(s) for on-street parallel or angled parking, except for where accessible spaces are provided.</li> <li>Parklets are not permitted along the curb in areas where bus stops or bus pull-offs are located.</li> <li>Parklets may not be constructed over utility access panels, manhole covers, storm drains, or fire hydrant shut-off valves.</li> <li>Bike Corrals can be considered when Pedestrian Zone space is limited and should be dedicated toother pedestrian uses, or where bike parking demand is very high.</li> </ul>	<p><i>page 127</i></p>

Zone	Dimensions	Considerations	Add'l Info
<b>Bikeway</b>  		<b>Shared Lane</b> <b>Conventional Lane Adjacent to Curb</b> <b>Buffered Lane Adjacent to Curb</b> <b>Buffered Lane Adjacent to Parking</b> <b>Protected Bicycle Lane</b> <b>Contra-Flow Lane</b> <b>Advisory Lane</b> VTrans ref. dwg. Standard E-131B Bicycle Guide Sign Details VTrans ref. dwg. Standard E-194 Bicycle Pavement Markings and Sign Layout	<a href="#">page 141</a> <a href="#">page 142</a> <a href="#">page 143</a> <a href="#">page 144</a> <a href="#">page 145</a> <a href="#">page 146</a> <a href="#">page 147</a> <a href="#">App. A-5</a> <a href="#">App. A-5</a>
<b>Travel Lane</b>  	10' minimum; 10.5' minimum on transit/truck routes	<ul style="list-style-type: none"> <li>Wider travel lanes (11' to 12') are appropriate in locations with high volumes of heavy vehicles.</li> <li>Travel lane widths of 10' generally provide adequate safety in urban settings while discouraging speeding. City may choose to use 11' lanes (10.5' min.) on designated truck and bus routes.</li> </ul> VTrans ref. dwg. Standard E-193 Pavement Marking Details	<a href="#">App. A-1</a>
<b>Turn Lane</b>  	9.5' min. 10' min. on Transit/Truck Routes	<ul style="list-style-type: none"> <li>Assess left-turn volumes and evaluate the overall traffic network to determine whether or not left turns can be restricted or removed at a particular intersection.</li> </ul> VTrans ref. dwg. Standard E-191 Pavement Marking Details VTrans ref. dwg. Standard E-192 Pavement Marking Details	<a href="#">App. A-1</a>
<b>Bus Berth</b>  	10' min.	<p>Bus berths consist of an entrance taper, a deceleration zone, a stopping zone, an acceleration zone, and an exit taper. They require the curb to be setback from the travel lane to bring the bus out of the flow of traffic.</p> <p>Bus berths work best in conjunction with streets with parking lanes, which in Burlington are typically 7.5' in width. The minimum berth width is 10', thus requiring the need to encroach on the treebelt/furnishing zone in order to accommodate the difference.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"> <li>Allows traffic to proceed around the bus, reducing delay for general traffic</li> <li>Maximizes vehicular capacity of roads</li> <li>Clearly defines the bus stop</li> <li>Passenger loading and unloading can be conducted in a more relaxed manner</li> <li>Eliminates potential rear-end accidents</li> </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>More difficult to re-enter traffic, increasing bus delay and increasing average travel time for buses</li> <li>In the presence of bicycle lanes, bus berths pose a potential conflict between buses and bicyclists when the bus needs to cross the bicycle lanes</li> <li>Uses additional space and may require right-of-way acquisition</li> </ul>	

## Pedestrian Zones

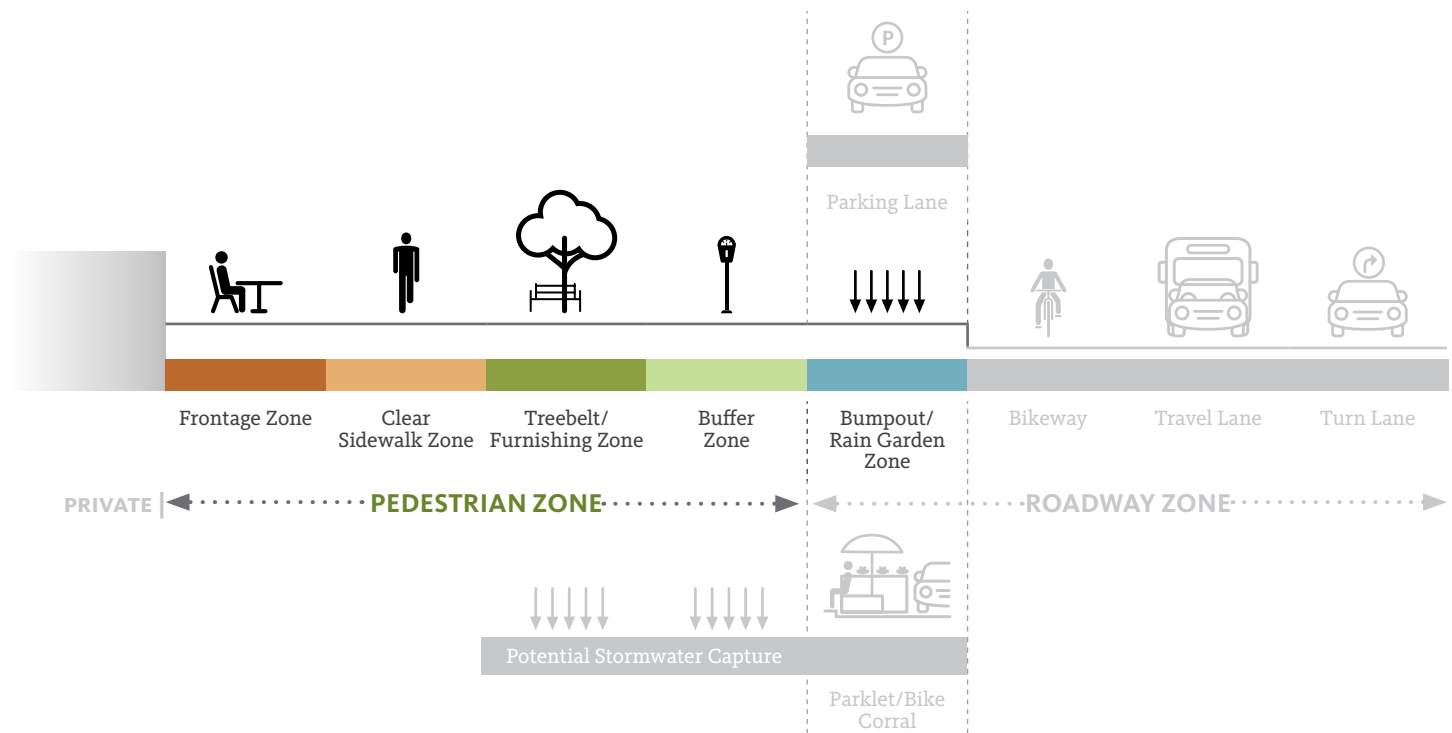
This zone is where all activities aside from driving and parking occur; in addition to unobstructed space for pedestrians to walk, this includes space for street trees and stormwater infrastructure, benches, lighting, mailboxes, and other furnishings, and in some cases, outdoor seating or dining for private uses along a street. The width of the Pedestrian Zone is essential to the degree of comfort, enjoyment, and accessibility of walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that cause people walk in the street. Therefore, the Clear Sidewalk Zone is the most critical element within the Pedestrian Zone; the minimum dimension should always be maintained and may require flexible sizing or elimination of other zones.

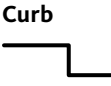



Typically, a five foot wide Sidewalk Zone supports two people walking side by side or two wheel chairs passing each other. An eight foot wide Sidewalk Zone allows two pairs of people to comfortably pass each other, and a ten foot or wider Sidewalk Zone can support high volumes of pedestrians. There may be corridors with high volumes of pedestrian activity for which a pedestrian level of service study would be helpful to determine sidewalk widths that adequately support pedestrians.



Vibrant sidewalks bustling with pedestrian activity are not only used for transportation, but for social walking, lingering, window-shopping, and people watching. Sidewalks, especially along Downtown Commercial, Downtown Mixed-Use, and Neighborhood Main Streets, should encourage social uses of the sidewalk realm by providing adequate widths.

When determining Sidewalk Zone widths, factors to consider include the available right-of-way, accessibility, anticipated pedestrian volumes, ridership projections for locations near transit, and the locations of bus shelters and transfer points. While these guidelines prescribe more generous preferred Clear Sidewalk Zone widths, they also establish a total minimum sidewalk width of 5' for all Street Types.

Widening sidewalks by a few feet is often cost prohibitive and may require significant changes to drainage infrastructure as well as the relocation of utilities. If feasible to adjust curb locations, the widening of sidewalks may be achieved by narrowing and/or removing travel or parking lanes, or establishing setbacks as a part of adjacent private redevelopments. Where setbacks cannot be established or roadway space cannot be reallocated, consider converting the roadway to a Shared Street to increase pedestrian space and reduce vehicle speeds.



Zone	Dimensions	Considerations	Add'l Info
<b>Curb</b> 	<b>Granite</b> 6" wide 17" min./19" max. total slab height 6" vertical reveal  <b>Concrete</b> 6" wide top 9" wide base 18" total slab height 6" vertical reveal	Granite and concrete curb comparison  The Curb Zone should be free from all objects, furniture, sign posts, etc.  See ref. dwg. <b>VTrans Standard C-10 Curbing</b>	<i>page 276</i>   <i>App. A-2</i>
<b>Stormwater/ Rain Garden Zone</b>  		See chapter on " <i>Stormwater</i> "	<i>page 215</i>
<b>Buffer Zone</b>  	18" minimum next to parked cars  2' minimum next to bicycle facility	<ul style="list-style-type: none"> <li>• An 18" minimum setback is required for vertical elements adjacent to parking. With a 6" curb, this means a minimum 12" buffer is required next to parking.</li> <li>• Bicycle parking must be 24" from a curb.</li> <li>• On roadways without on-street parking and/or higher speeds, setbacks for vertical elements should be greater than 18" where feasible.</li> </ul>	
<b>Tree Belt/ Furnishing Zone</b>  	6' minimum 8' preferred	Maximize the Tree Belt/Furnishing Zone to provide as much of a buffer as possible between the Sidewalk Zone and adjacent street traffic; however do not reduce the Clear Sidewalk Zone beyond the minimum recommended widths. When space is limited at the surface, resulting in a Tree Belt/Furnishing Zone of less than 8', the soil volume for trees can be achieved by encroaching under the Buffer Zone, Clear Sidewalk Zone, and, if applicable, Raised Cycle Track.  For new developments and where opportunities are available to create a consistent setback, designs should accommodate wider sidewalks with generous Tree Belt/Furnishing Zones. Consider traffic calming elements, such as curb extensions or chicanes where on-street parking is present, to provide more space for street furniture, trees, and other amenities.	<i>page 173</i>

Zone	Dimensions	Considerations	Add'l Info
<b>Clear Sidewalk Zone</b>  	5' width minimum Preferred with varies by street type; see street types  Slab thickness: 5" residential 8" commercial  Compressive Strength: 4000 PSI	<p>The Sidewalk Zone should be clear of any obstructions including utilities, traffic control devices, trees, and furniture. While these guidelines prescribe more generous preferred Sidewalk Zone widths, they also establish a <b>total minimum sidewalk width of 5'</b> for all Street Types. The ADA minimum walkway width is 4', with a 5' width every 200'; this may be applied when severe dimensional constraints exist upon approval of the City Engineer.</p> <p>When reconstructing sidewalks and relocating utilities, all utility access points and obstructions should be relocated outside of the Clear Sidewalk Zone.</p> <p>Residential driveways are defined as serving single-family, duplex, or three unit structures. Commercial driveways include residential properties with more than three units, as well as mixed use and commercial properties.</p> <p><b>VTrans ref. dwg. Standard C-2A Portland Cement Concrete Sidewalk Drive Entrances With Sidewalk Adjacent Curb</b></p> <p><b>VTrans ref. dwg. Standard C-2B Portland Cement Concrete Sidewalk Drive Entrances With Sidewalk And Green Strip</b></p>	<p><i>App. A-2</i></p>
<b>Frontage Zone</b>  	<p>Not required; preferred widths based on adjacent use:</p> <ul style="list-style-type: none"> <li>0'-1' width where building or fence setbacks are required by building code.</li> <li>1.5' min. where retail and hospitality uses are encouraged.</li> <li>3.5' min. where outdoor seating and display are anticipated/encouraged.</li> </ul> <p>See Preferred width for each street type.</p>	<p>The Frontage Zone is the area between the Clear Sidewalk Zone and either the front wall of an adjacent building, or the edge of a right-of-way. It is where people window shop, enter and exit buildings, or sit and gather at outdoor cafés/restaurants. It also provides a buffer from a building facade that is built to a Frontage Line, so that pedestrians do not have to walk with their shoulders pressed against a building.</p> <p>The ideal dimension for a successful frontage zone is 3.5'. This Zone should be maximized to provide space for cafés, plazas, and greenscape elements along building facades wherever possible, but not at the expense of reducing the Clear Sidewalk Zone below the minimum widths.</p>	<p><i>page 124</i></p>

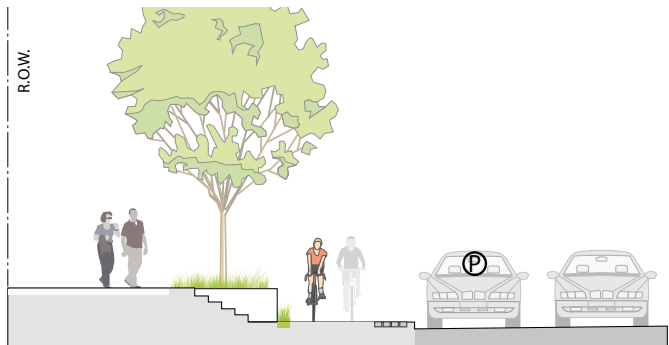
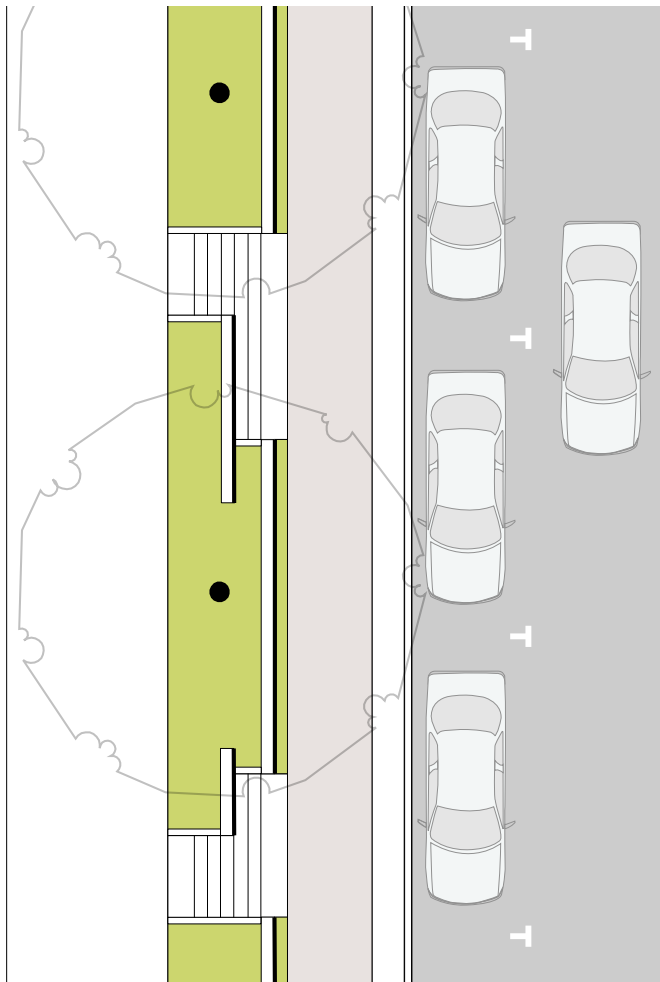
## Grade Changes in Pedestrian Zone

Because of Burlington's sloping terrain, there currently exist a few street conditions where there are challenging differences in elevation between street level, pedestrian walkway, and private property. These differences, for example, make it difficult for someone who parks on the street to make their way up to the sidewalk and into their destination. These discrepancies should be addressed on a case-by-case basis as conditions change from site to site, but the following diagrams address some common factors that need to be considered. In most cases, the height difference (beyond the standard 6" curb height) that needs to be mitigated between street and sidewalk ranges between 2–3 feet and the condition occurs at the mid block, not at intersections. These examples anticipate addressing the grade change within the Tree Belt/Furnishing zone.

In the first scenario (**Level Change—Wide Pedestrian Zone**, next page, left), the condition shown accounts for a raised cycle track (proposed Main Street condition) but the site conditions are generous enough to accommodate the level change while maintaining all minimum zone widths and setbacks.

In the second scenario (**Level Change—Narrow Pedestrian Zone**, next page, right), a constrained sidewalk condition allows the level mitigation to occur within a reduced tree belt while maintaining an adequate buffer next to parking and maintaining a minimum Clear Sidewalk Zone. This condition wouldn't accommodate a Frontage Zone but paving or grates within the Tree Belt/Furnishing Zone, and should not be used for long traverses, but would allow a clear and usable sidewalk dimension with flexibility for accommodating door swings and other encroachments.

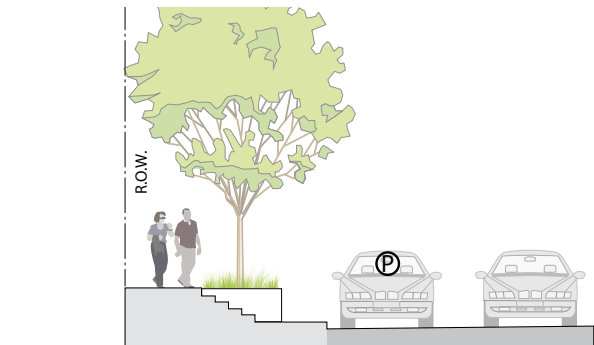
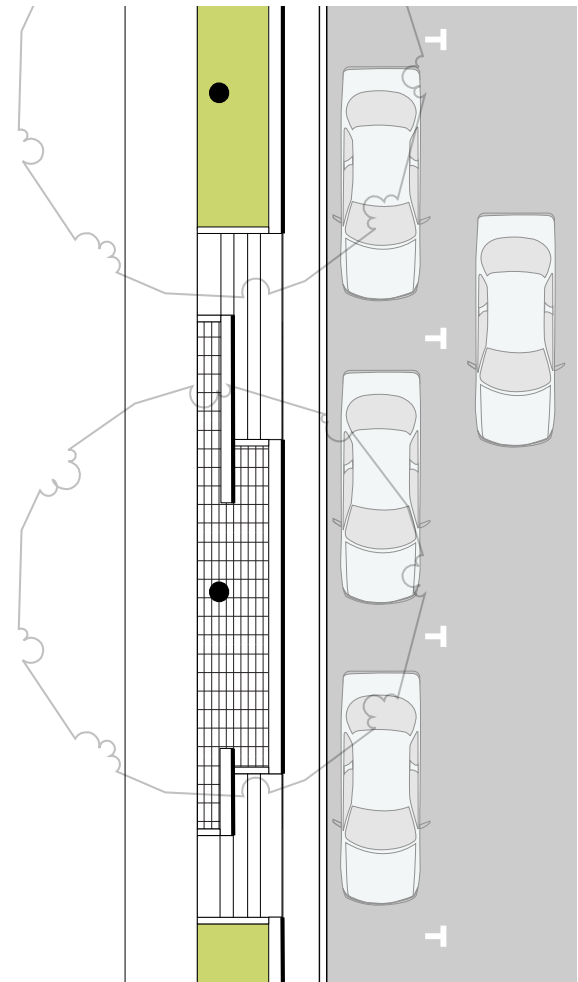
Grade Change—Wide Pedestrian Zone



	Clear Sidewalk Zone	Treebelt / Furnishing Zone	Bikeway	Buffer Zone	Parking Lane	Travel Lane
	3.5'	8'	8'	6.5'	2.5'	
Pedestrian Zone						
	29'+					

Option for accommodating grade changes within a wide Pedestrian Zone, utilizing a tree belt zone that is planted or paved.

Grade Change—Narrow Pedestrian Zone



	Clear Sidewalk Zone	Treebelt / Furnishing Zone	Buffer Zone	Parking Lane	Travel Lane
	5'	5.5'	2.5'		
Pedestrian Zone					
	13.5'				

Option for accommodating grade changes within a narrow Pedestrian Zone, with the tree belt zone utilizing either pavers or tree grates.



## Intersection Zones

Intersections are critical yet challenging parts of the city streetscape and transportation network, as they are the place in which all of the various uses within the public right-of-way (ROW) come together, and intersect. Conflicts between pedestrians, bicyclists, and drivers are typically greater here, but when designed carefully, intersections can not only be safe, but they can also tap civic and economic potential by infusing these challenging spaces with street life and activity.

This document is not intended to replace the MUTCD, or preclude intersection treatments that may be appropriate for a certain location and traffic condition. These standards do provide guidance on priorities for design. In particular, intersection design should be self-evident to all users, and should promote awareness and visibility between all users so that they can more effectively share the space. In signalized intersections, delays should be minimized for all modes of travel, while prioritizing signals for pedestrians, cyclists and transit, utilizing predictable/natural signal phasing.

### Pedestrian

- Intersections should be designed to be as compact as possible to reduce pedestrian exposure to traffic while crossing.
- Ensure that signal timing works for both commuters and slower walkers.
- Locate crossings and waiting areas within sight triangles.
- Reclaim area within the right-of-way that is not used for driving or cycling to sidewalk or usable pedestrian space.
- Continuity of pedestrian paths of travel and connectivity should be improved and encouraged by introducing crosswalks at signalized and unsignalized intersections where possible.
- Landscape or use sustainable materials for all spaces not used for walking, cycling or driving.

### Cyclist

- Bicyclist left turns may be facilitated using intersection crossing markings, protected intersection treatments, protected lanes in advance of an intersection, bike boxes, and 2-stage turn queue boxes.
- Merge cyclists with slow speeds and low volumes, separate cyclists from fast speeds and high volumes.
- Prioritize cyclists over turning drivers.
- Ensure sufficient queue space for cyclists.
- At intersections, accommodate bicyclists through mixing zones. Avoid the use of mixing zones or restrict turns where turn volumes are likely to make bicyclists feel unsafe, or where a protected lane enters the intersection to ensure a protected facility through the intersection.
- While a dedicated bicycle signal is generally desirable from a safety point of view, an added signal phase lengthens the overall cycle length and exacerbates delay for all users.

### Transit

- Minimize delay to transit vehicles using transit signal priority. Determine the transit stop placement based upon the location of major destinations, transfer activity, and route alignment. At signalized and unsignalized intersections, far-side transit stops are preferable. Bus bulbs improve transit travel times and provide a dedicated space for waiting passengers.

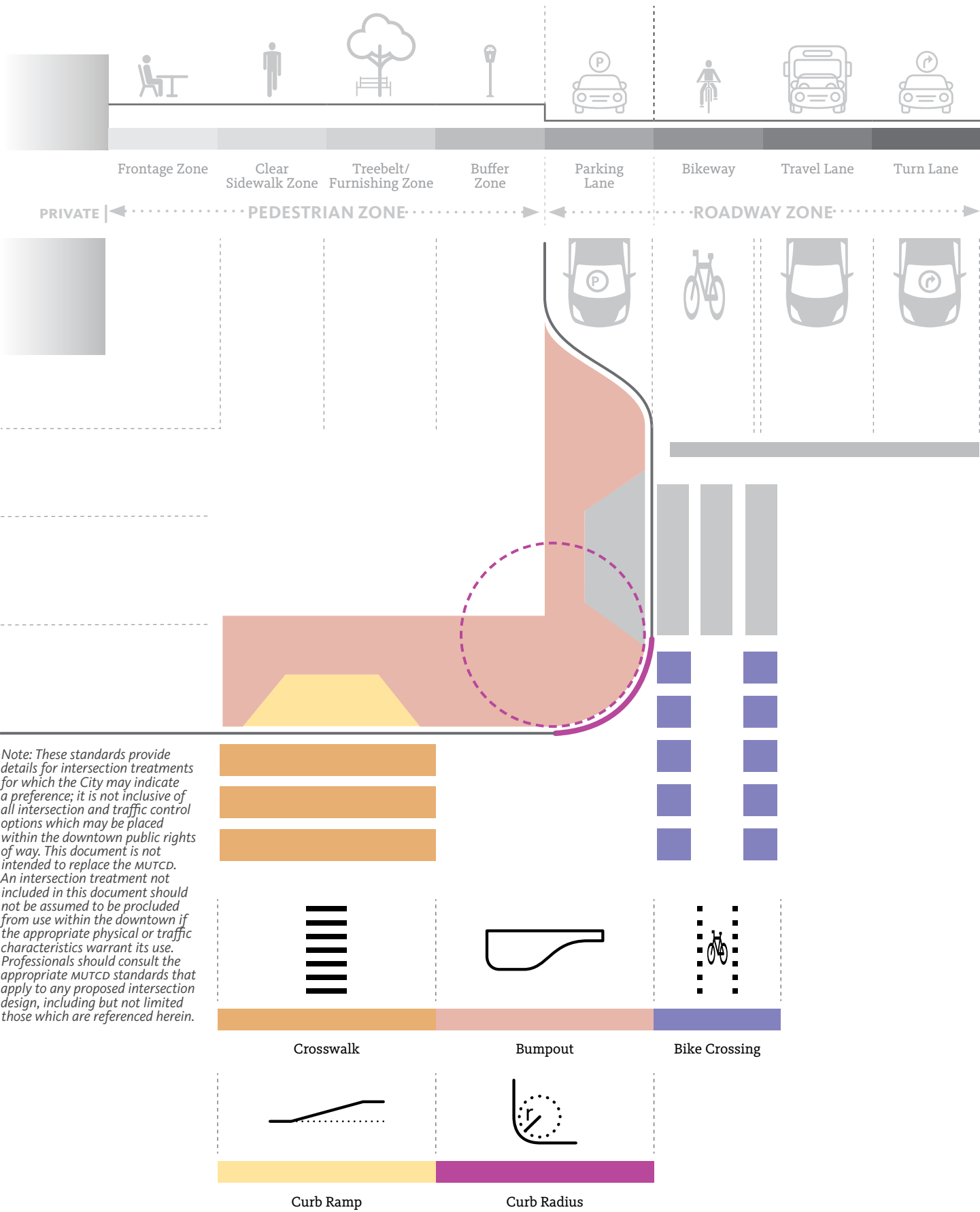
### Vehicles



- Intersection design should limit the addition of dedicated turn lanes and pockets, and remove slip lanes where possible.
- Control speeds by tightly managing the design and spatial layout of intersections. Tighten lane widths and eliminate unnecessary travel lanes, reallocating space for other uses which will create a balanced use of the ROW.
- Limit opportunities for drivers to make sudden movements.
- Square off skewed intersections.
- Minimize speed, especially at turns. Curb extensions, tight corner radii, cycle tracks, and pedestrian safety islands force drivers to navigate intersections cautiously.
- Set signal timing between intersections to keep travel speeds slow.
- Align lanes so that number of approach and departure lanes are equal.
- Align lanes through an intersection and enforce turning lanes with curb extensions to reduce merging and weaving. Delineate guide markings through intersections to reduce conflicts and guide turning vehicles.



## Reducing Crosswalk Length: Roadway Narrowing & Bumpouts

In addition to gaining adequate width for walkways and tree belts, reducing the Roadway Zone width allows for shorter crossings for pedestrians at intersections, which should be a priority when designing Great Streets. These standards are intended to reverse the trend towards ever longer crosswalks, as streets were widened to accommodate more vehicular traffic with more and wider travel lanes by shortening the crosswalks as much as possible, thereby reuniting the two sides of the street.

This can be combined with a second strategy of introducing "curb extensions" or "bumpouts." These are constructed at intersections, and are typically the depth of the parallel parking lane. The reductions in crossing distance and crossing time are significant, and increases the safety for pedestrians when within the Roadway Zone. On a 40' roadway, bumpouts can reduce the crossing length from 40' to 24', and the average exposure time from 10 seconds to 6 seconds. On a 35' roadway, bumpouts can cut crossing time and exposure in half, from 8 seconds to 4 seconds.



Zone	Dimensions	Considerations	Add'l Info
<b>Crosswalk</b>  	<p>Commercial: 14'–16' width Residential: 10'–12' width</p> <p>Crosswalks may not be located within 3' of the straight line of each side of a driveway.</p> <p>See "<a href="#">Parking Lane</a>" on <a href="#">page 99</a> for required separation of parking from crosswalks.</p>	<p>Safe and frequent crosswalks support a walkable urban environment and reinforce pedestrian right-of-way at intersections. Crosswalks should be applied at:</p> <ul style="list-style-type: none"> <li>• All open legs of a signalized intersection.</li> <li>• Across a roadway approach controlled by a "STOP" or a "YIELD" sign if there is a sidewalk on both sides of the approach.</li> <li>• At intersections on roadway approaches not regulated by signals, "STOP" signs or "YIELD" signs if the speed limit is 40 MPH or less, and there are sidewalks on both sides of the approach. Because non-intersection pedestrian crossings are generally unexpected by the road user, warning signs should be installed and adequate visibility should be provided by parking prohibitions.</li> <li>• Mid-block as needed.</li> </ul> <p>Because children constitute a high percentage of the walking public, crosswalks that provide accessible routes to schools are among the first locations that should be considered. Elderly pedestrians and pedestrians with disabilities are highly dependent on transit, so providing crosswalks at or near transit stops as well as near housing for the elderly should also receive high priority.</p> <p>Marked crosswalks should be placed as close to perpendicular as possible, unless a traffic engineering study determines otherwise.</p>	<p><a href="#">page 280</a></p>
<b>Bike Crossing</b>  	<p>Crossing lane width should match width and positioning of the leading bike lane (5' min. width, 4' width in constrained areas)</p>	<p><b>Protected Intersection</b> <b>Bicycle Boxes</b> <b>Two-Stage Left Turn Boxes</b> <b>Bicycle Crossing Markings</b> Typical Applications:</p> <ul style="list-style-type: none"> <li>• Across signalized intersections, particularly through wide or complex intersections where the bicycle path may be unclear.</li> <li>• Along roadways with bike lanes or cycle tracks.</li> <li>• Across driveways and Stop or Yield-controlled cross-streets.</li> <li>• Where typical vehicle movements frequently encroach into bicycle space, such as across ramp-style exits and entries where the prevailing speed of ramp traffic at the conflict point is low enough that motorist yielding behavior can be expected.</li> <li>• May not be applicable for crossings in which bicycles are expected to yield priority, such as when the street with the bicycle route has Stop or Yield control at an intersection.</li> <li>• When a bike facility intersects with a roundabout, a shared lane marking and/or ramp shall be utilized within/adjacent to the roundabout.</li> </ul> <p>Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.</p>	<p><a href="#">page 152</a> <a href="#">page 154</a> <a href="#">page 155</a> <a href="#">page 149</a></p>
<b>Bumpout</b>  	<p>Width: 7.5' (ensure consistent with the adjacent parking lane dimension)</p> <p>5' min. length beyond extension of corner property line</p>	<p>With on-street parking is present, bumpouts are an ideal treatment to occupy the space between the intersection and the first parking stall for Pedestrian Zone amenities. Bumpouts can also be used for curb extension at mid-block crossings.</p> <p>Bumpouts should have a reflective elements at the corners on the street side for visibility in night and winter conditions.</p> <p>See the "<a href="#">Street @ Intersection Assemblies</a>" and "<a href="#">Street Ecology: Stormwater</a>" sections for information on how to design and utilize the space created within bumpouts.</p>	<p><a href="#">page 80</a> <a href="#">page 215</a></p>

Zone	Dimensions	Considerations	Add'l Info
<b>Curb Ramp</b> 	<b>Nominal Dimensions &amp; Grades</b> <ul style="list-style-type: none"> <li>Ramp width: 48" min. flat</li> <li>Preferred width: Marked crosswalk width less 3'.</li> <li>Running slope: 1:12 (8.3%) max. in new construction</li> <li>Cross-slope: 1:48 (2%) max.</li> <li>Counter-slope: 1:20 (5%) max. at gutter</li> <li>5' min. flat (or 2% max. slope) landing at top of ramp</li> </ul> <b>Flared Ramp</b> <ul style="list-style-type: none"> <li>Sidewalk Ramp Type 5</li> <li>Flare slope: 1:10 (10%) max.</li> <li>Min. width: 48" (not incl. flares)</li> </ul> <b>Curbed Ramp</b> <ul style="list-style-type: none"> <li>Sidewalk Ramp Type 3</li> </ul> <b>Detectable Warning</b> <ul style="list-style-type: none"> <li>24" min. from back of curb</li> <li>Full width of ramp</li> </ul>	<p>A curb ramp provides pedestrians a smooth transition from the sidewalk to the street. Appropriately designed curb ramps are critical for providing access across intersections and at midblock for people with mobility and visibility disabilities. ADA guidelines require all pedestrian crossings to be accessible to people with disabilities by providing curb ramps. Curb ramps also benefit people pushing strollers, grocery carts, suitcases, or bicycles.</p> <ul style="list-style-type: none"> <li>Paired curb ramps preferred.</li> <li>One at each crossing perpendicular to curb line. <ul style="list-style-type: none"> <li>Within crosswalk at foot of ramp.</li> <li>No exposure to moving traffic lane.</li> </ul> </li> <li>Avoid diagonal curb ramps where possible.</li> <li>Avoid fully flared ramps that wrap the entire intersection curb radius.</li> <li>Small lip at connection with street for stormwater flow management.</li> </ul> <p>See ref. dwg. <b>VTrans Standard C-3A/B Sidewalk Ramps</b></p> <p><i>"Detectable Warnings/Truncated Domes"</i></p>	<p><i>App. A-3</i></p> <p><i>page 284</i></p>
<b>Curb Radius</b> 	10'–15' radius	<p>Curb radii determine the speed at which vehicles are able to turn corners. Within the downtown core, there is a desire to encourage slower driving speeds that improve the safety for all users. Therefore, curb radii in the range of 10'–15' will work well and support most transportation needs. Radii of as little as 5' may be acceptable if other factors increase the effective radius. In general, curb radii should be kept to the minimum consistent with overall safety and operations.</p> <p>Larger radii should be considered carefully and only implemented as requirements dictate. Other treatments can be considered for high truck volume areas, such as appropriately designed truck aprons.</p>	
<b>Roundabout</b>	<p>When roundabouts are used within intersections, the design should prioritize single lane, mini, and traffic circles, and:</p> <ul style="list-style-type: none"> <li>incorporate approach and exist angles which promote slower moving vehicles</li> <li>utilize mountable elements or a mountable roundabout itself</li> <li>include either a ramp or advisory lane markings for bicycle facilities through the roundabout</li> </ul> <p><b>Advantages of a roundabout:</b></p> <ul style="list-style-type: none"> <li>Vehicle speed is reduced compared to other intersection types</li> <li>Pedestrians have fewer conflict points with vehicles than other intersection types</li> <li>Pedestrian judgement of safe crossing opportunity is benefitted by slower moving vehicles which are traveling in one direction</li> <li>Splitter island refuges allow pedestrians to cross vehicular flows separately</li> <li>Pedestrian crossing is accomplished in less time than a signalized intersection</li> </ul> <p><b>Disadvantages of a roundabout:</b></p> <ul style="list-style-type: none"> <li>May require a larger footprint within the right of way than other intersection designs</li> <li>Throughput of a roundabout is greater than a signalized intersection, which might put pressure on (create stacking at) adjacent signalized intersections</li> <li>Vehicle traffic is yield controlled, so it does not come to a complete stop, which might cause some pedestrians to be hesitant to begin using crosswalk</li> <li>Roundabouts can be an unsettling design for some pedestrians depending on age, mobility, visual or other impairments, ability to judge gaps in traffic, or other factors</li> <li>Pedestrians must learn and adjust to intersection design, such as the crosswalk potentially being located behind the first stopped/slowed vehicle approaching the intersection</li> <li>For less experienced cyclists, roundabouts can be difficult to navigate</li> </ul>		

## Utilities

In order to ensure an equitable balance of uses within the City's public rights of way, it is recommended that when whole blocks or multiple blocks of a street are rebuilt, the required and preferred dimensions and location of surface elements drive the relocation/replacement/upgrade of subsurface utilities whenever possible. This will provide greater continuity of and less uncertainty regarding the location of underground infrastructure, which is a problem that plagues many construction projects in the City. Additionally, this will provide more reliable access to subsurface utilities in the event that they need to be reached in an emergency, and will involve cutting and replacing less expensive and complicated portions of the street cross section. Therefore, this section indicates the City's preferred location for underground utility systems—both public and private.

### STORMWATER

Stormwater drainage facilities and structures are usually located along the edge of roadway where they often present conflicts with bicyclists. Careful consideration should be given to the location and design of drainage facilities on bicycle compatible roadways. A "bicycle safe" drainage grate with acceptable hydraulic characteristics should be used in all normal applications and must be installed flush with the final pavement or should be curb inset.

Manholes and covers should be located outside of the lane sharing area wherever possible. Utility fixtures located within the lane sharing area or any travel lane used by bicycle traffic should be eliminated or relocated. Where these fixtures cannot be avoided the pavement surface should be made flush with the particular facility.

These standards have been developed to maximize the potential use of green stormwater infrastructure, and to reduce the quantity of stormwater runoff that is utilizing the City's combined sewer system for treatment. Extensive recommendations for green stormwater infrastructure that can be incorporated throughout the Roadway and Pedestrian Zones downtown are provided in *"Stormwater" on page 215*.

### AERIAL UTILITIES

These standards follow the *Municipal Development Plan* guidance that electric, telecom services that are currently aerial within the downtown core are buried when roads are reconstructed. Wherever overhead utilities exist, they should be buried when a block face or more of a street is being reconstructed.

## UTILITY BOXES

### Ground Mounted Controller Cabinet

#### Cabinet Dimensions

Vary with manufacturer, but a typical cabinet has dimensions of 26" depth and 46" width.

#### Concrete pad dimensions

Cabinet width + 4", depth + 4" + 2' clear zone in front of doors; 9" and 6" slab thickness.

#### Sub-base

2' minimum; crushed gravel—fine graded.

#### Setbacks

The minimum clear zone in low speed urban areas is 2' beyond the face of the curb. In other cases, the minimum is equal to the clear zone as defined by AASHTO's Roadside Design Guide. 1' min. from walkway.

#### Reference

See ref. dwg. **VTrans Standard E-171B Traffic Control Signals Misc. Details** in *Appendix section A-4*.

### Pole Mounted Controller Box

#### Typical Cabinet Installation

2' pole setback from curb face (applies only in urban low speed areas). 3'-4' from concrete pad to bottom of cabinet. 1' minimum from sidewalk to pole or cabinet (when they are less than 7' above sidewalk). 5' height from concrete pad to meter socket.

#### Concrete pad dimensions

6" thick, 3' width, 4' depth (3.5' from face of cabinet; may be adjusted as necessary where sidewalk or roadway is adjacent to controller). Pad may be deleted when pole is placed in a paved area.

#### Sub-base

6" crushed gravel—fine graded.

#### Reference

See ref. dwg. **VTrans Standard E-171A Traffic Control Signals General Notes & Details** in *Appendix section A-4*.



## Pullboxes and Junction Boxes

Wherever feasible, these should not be located within the Clear Sidewalk Zone. If located generally within the Pedestrian Zone, covers need to be flush with the sidewalk, and feature non-slip elements.

See ref. dwg. **VTrans Standard E-173 Pullboxes and Junction Boxes** in [Appendix section A-4](#).

## Box Appearance/Masking

Burlington's Department of Public Works spends a great deal of time cleaning graffiti off of its property, and the gray traffic control boxes with their large, blank surfaces have been an ideal target for vandals. DPW has experimented with creative ways of addressing the issue by sponsoring the commission of a few ground mounted traffic control box murals throughout downtown. Efforts like this enhance the cultural environment, visual landscape and the quality of life for residents and visitors.

New technologies, and technologies used in other fields have made it possible to broaden box enhancement possibilities. Wraps, much like those used on city buses, have made it possible to go beyond traditional one-of-a-kind painted art and opened the graphic pool to photographers and graphic designers as well. Wraps have also made it possible to have more temporary approaches that can be replaced or changed more readily. This opens up the possibility of themed treatments that can change over time or that can be reproduced when infrastructure is replaced. Photos at right illustrate examples of treatments, including traditional painted art, and wraps with photos of historic and landscape themes.

## ADDITIONAL UTILITIES REFERENCES

The following reference drawings can be found in [Appendix section A-4](#) "":

- BED Standard 1601 Underground General
- BED Standard 1602 Excavation and Conduit
- BED Standard 1603 Conduit in Trench
- BED Standard 1604 Typical Trench
- BED Standard 1605 Fiberglass Box Single Ø Transformer Specs & Installation
- BED Standard 1606 Single Ø Padmounted Transformer, Dead Front
- BED Standard 1609 Utility Hole Grounding
- BED Standard 1622 Three Ø Transformer Concrete Pad
- BED Standard 1625 Underground Enclosures

Note: All BED standards shall meet AASHTO full H-20 load rating for utilities located in greenbelt, sidewalk, and roadway, and shall be placed in the ROW in a way that is least obtrusive.



## Element Siting & Considerations

### All Furnishings

Regardless of the sidewalk width, a minimum five foot (5') Clear Sidewalk Zone must be left clear from vertical streetscape elements at all times for pedestrian through passage, and should be exceeded wherever possible. Additionally, placement of elements should follow ADA guidelines outlined in PROWAG clear space requirements for streetscape furnishings. Interagency coordination is required in order to achieve these goals.

- Fixed street furnishings shall not impede pedestrian traffic in the sidewalk buffer or walkway zones.
- Provide a clear, walkable, path of 5' min. width between each building entrance and the street curb. The path must be free of fixed furnishings and be reasonably direct.
- Layout of sidewalk elements such as furnishings, signs, light poles, utility covers, hydrants, traffic control devices, and parking meters should maximize safety, comfort, and function.
- Provide adequate clear space for exiting buildings per Burlington Fire Code, including a path for egress a minimum of 10 ft long and 3 ft wide.
- 5' min. clear space between Fire Hydrants and any Streetscape Furnishings; hydrants located to minimize conflicts with motor vehicles.
- Maintain min. 1' clear space between all Streetscape Fixtures (mounted furnishings, amenities, signs, utilities, etc.)
- Maintain clear sight triangles for vehicles at intersections and driveway crossings as required by the Burlington's Comprehensive Development Ordinance.
- Signs should be consolidated (based on size) to one pole or light post to reduce clutter and maximize visibility.
- Layout of the Tree Belt/Furnishing Zone should function to store snow and consider which furnishings and elements must remain accessible during winter months.

No person may place, operate, or maintain any street furniture on a public street, sidewalk, or public right-of-way without a permit from the City of Burlington. In all cases, replacement of curbs, gutters, and sidewalks will require a permit from the City of Burlington.

### A-Frame Signs (Sandwich Boards)

Temporary A-Frame signs are permitted to add variety and color to the streetscape, to promote downtown business, and to supplement business signs on facades or within the property. The following guidelines include those which are contained in the Code of Ordinances Chapter 21, Article 1, Section 5.

- A-frame signs are permitted within specified zoning districts. Within downtown, these are permitted on properties located between Battery and Winooski and Pearl and Main, as well as along Lake Street and the waterfront.
- One temporary A-frame sign is permitted per business.
- Signs may be permitted in the Frontage Zone as long as applicable clearances are met, and where the sign is located more than 12' from other previously permitted signs.
- Upon approval of DPW, signs may be placed in the Tree Belt/Furnishing Zone in an area between eighteen inches (18") and five feet (5') from the face of curb.
- Signs should not obstruct the normal flow of pedestrian traffic.
- When located in the frontage zone, signs shall be no more than 4' high x 3' wide, and the total area of the sign may not exceed 8 sq.ft.
- When located in the Tree Belt/Furnishing Zone, within 40' of an intersection, or 15' of a driveway curb cut, signs may be no more than 2.5' high x 3' wide, and the total sign area may not exceed 6 sq.ft.
- Signs may not be illuminated, animated, or electrified in any way.
- Adjacent to a street parking space (except for an accessible parking space), the sign may be located only in the area on the sidewalk that is within five feet (5') of the beginning or end of the parking space, as indicated by the parking space markings on the street.
- Signs should be constructed of durable materials that are weather and rust resistant. Signs should be well-maintained and free of graffiti at all times.
- Signs should display the City permit number sticker on the upper right corner of the sign.
- Signs may not be attached to any other structure on the sidewalk, including trees and/or tree grates, and should be sufficiently weighted to avoid blow-down.
- Signs shall not be placed out prior to 6am, and must be removed prior to 5 PM (September 22–March 20) or 7 PM (March 21–September 21).

### Banners

Banners shall be located over the Pedestrian Zone, and not obstruct in any way the public's view of traffic signals, street signs, or any other City approved sign. Banners are to be hung on City light poles with standard banner arms, or on poles outfitted with after-market banner arms installed properly by the City. The lowest banner arm should be located at least 8' AFG.

Banners on street light poles must not exceed 24" in width and 48" in height, total length including pockets. Banners must have a hemmed top and bottom and must be made of durable cloth, canvas, nylon, or vinyl. It is recommended that banners include a slit or other design feature to reduce wind loading and enhance the durability of the banner.



## Benches

Benches are an important public resource and are essential in making streets friendly for pedestrians. Benches are permitted in the public right-of-way, space permitting, on all streets. Benches and other sitting elements are also strongly encouraged in building setbacks adjacent to the public right-of-way. Permits are required for private benches placed in the public right-of-way.

- Benches in a Tree Belt/Furnishing Zone that is six feet (6') or eight feet (8') wide should be oriented perpendicular to the street. In narrower Tree Belt/Furnishing Zones, benches may be oriented parallel to the street, facing the sidewalk. In all cases, benches should be a minimum of 18" from the face of the curb.
- Benches in the Frontage Zone are encouraged, space permitting, adjacent to blank walls or if approved by tenant. Minimum Clear Sidewalk Zone of five feet (5') should be maintained.
- Backless Benches: Provide 36" clear space in front of and behind benches for pedestrian accessibility.
- Benches with backs: Provide 36" clear space in front of benches for pedestrian accessibility.
- Multiple street furniture elements such as planters and benches may be combined in one installation but must meet minimum placement requirements.
- Benches should not be placed on tree grates, utility covers, or manholes. Bench placement should not interfere with ADA access ramps, accessible parking or loading areas, fire hydrants, or emergency vehicle access.
- No advertisement is allowed on benches, except placards recognizing BPRW Adopt-a-Bench donors.

## Bike Corrals

Locate in street to fill one or two standard parallel parking spaces, or two to three diagonal parking spaces, in coordination with Burlington Department of Public Works. See additional detail on [page 134](#).

## Bike Racks

Bike racks are an important element that provide an incentive for bicycle ridership. Bike racks are strongly encouraged throughout downtown, particularly near activity areas and destinations.

- Bicycle racks are encouraged in the Tavree Belt/Furnishing Zone and in bumpouts.
- Bicycle racks are allowed in the Frontage Zone and within a building setback as long as they do not impede

pedestrian traffic in the Clear Sidewalk Zone and minimum clearances are met.

- A minimum of five feet (5') Clear Sidewalk Zone for pedestrians must be maintained including when bicycles are parked in the rack.
- Maintain 3' min. clear space between bicycle racks.
- Maintain at least three feet (3') of clearance between bicycles parked at racks and any other street furniture.
- Maintain two foot (2') minimum clear space between bicycle racks and Clear Sidewalk Zones.
- Single racks may be installed parallel to the street. Continuous (multiple or ribbon) racks may be placed perpendicular to the curb as long as minimum setbacks are met including clear pedestrian zones, 18" minimum distance from the curb face, and three feet (3') clear from other furnishings.

## Bike Share Hubs

It is anticipated that many of the bike share hubs will be located on adjacent private property. When located within the public right-of-way, hubs should:

- Include bicycle parking facilities that are clearly distinguished from other public bicycle parking.
- Be located within a bike corral within the parking lane or in a bumpout.
- Adhere to other placement guidelines for bike racks and bike corrals.

## Bollards

Bollards are used in areas where vehicles might encroach into pedestrian areas. They may also be used to protect street lights, street trees, public art, and other sidewalk elements from potential vehicular conflict.

- Bollards should be placed eighteen inches (18") from the curb. If there is no parking in the bollard placement area, the bollard may be installed immediately adjacent to the curb.
- All bollard installations must leave a minimum of six feet (6') of clear pedestrian passage between the bollards and any adjacent property lines.
- Bollards must be removable at locations that require emergency vehicle access.

## Kiosks (Map, Information & Bulletin Board)

Three types of kiosks may be located within the downtown rights-of-way: pedestrian wayfinding information/map kiosk, event/information kiosk, and public bulletin boards.

- All kiosks should be located in the Tree Belt/Furnishing Zone, a minimum of eighteen inches (18") from the curb face, and perpendicular to the curb.
- Kiosks may not exceed seven feet (7') in height, three feet (3') in width/diameter, and one foot (1') deep.
- Local event information kiosks & bulletin boards shall be separated by a distance of not less than 150' per block face with a maximum of two kiosks per block.
- No more than two kiosks are recommended at any corner intersection.
- Where more than one local event information kiosk is located on a block, at least one must be non-curved (i.e. a bulletin board).

### Movable Tables & Chairs

- Within the ROW, locate movable tables & chairs within paved Treebelt/Furnishings or Frontage Zones.
- Movable tables & chairs may not be located on tree grates.
- While no clear space is required between movable tables & chairs, it is recommended that a standard of 15 sq.ft. per person load factor be applied when determining capacity of the space the tables and chairs will occupy. This load factor is inclusive of people, tables, chairs and aisles, and is consistent with the 2013 Life Safety Code.

### Newsracks

While newsracks serve an important function in the city, improperly placed newsracks can be an eyesore and a safety hazard for pedestrians. In an effort to minimize these conditions, consolidated, pedestal-mount newsracks are recommended for all installations.

- Newsracks must conform to the general placement guidelines outlined for streetscape elements.
- Newsracks should be located in the Tree Belt/Furnishing Zone a minimum of eighteen inches (18") and no more than thirty inches (30") from the curb face, as measured from nearest face of the newsrack.
- Newsracks may not be installed on tree grates, and must be minimum twelve inches (12") from tree grate, as measured from nearest face of the newsrack.
- Newsracks must be minimum twenty-four inches (24") from other furnishings (parking meters, benches, trash receptacles, etc.)
- Newsracks may be located in the Frontage Zone, against blank walls.
- No newsrack may be placed within three feet (3') of a utility cabinet or on top of an underground utility vault.
- No newsrack may be placed within five feet (5') of a fire hydrant, emergency facility, any driveway, or bicycle rack.

- Newsracks are not permitted within any accessible parking spaces, vehicle or passenger loading zones, or bus stop shelters.
- Consolidated newsrack groups may be placed in a continuous row with a maximum length of ten feet (10'). In this case, a space of no less than three feet (3') separating each group is required.
- It is the responsibility of the newsrack operator to ensure that the newsracks are well-maintained at all times, free of graffiti and vandalism.

### Parking Meters & Kiosk

When individual parking meters are used, double meter heads should be placed on a single pole serving two adjacent parking spaces.

On rebuilt streets, the preference is to use parking kiosks. One kiosk should be located for every 10–16 parking spaces, and should be centrally located between the parking spaces it is serving. At minimum, one should be located on each block served by a kiosk (if the number of spaces served is less than 10); in some circumstances, the City may consider locating the kiosks at optimal locations along the parking spaces to enhance customer service.

### Pedestrian Wayfinding Signs

Pedestrian-oriented signs have been developed for downtown to assist visitors and residents. Examples of key destinations to include in signage and/or to locate signage are libraries, post offices, government offices, transit centers, schools, museums, entertainment centers, shopping districts, parks, public restrooms, and tourist attractions.

Place only enough signs to lead a pedestrian confidently to the destination by the best route. Avoid adding clutter to the streetscape; cluster signs in strategic locations on a single post where possible.

### Planters

Well-maintained planters can be a colorful addition to the streetscape in areas where constraints exist that do not allow trees to be planted in the ground, or if additional planting is desired to compliment existing trees and tree pit plantings.

- Placement of planters in the public right-of-way must be approved by the city.
- Planters may be placed in the Frontage Zone, Tree Planting/Furnishing Zone, Parklets, and bumpouts.

- Planters must be maintained at all times, free of debris, with provisions for watering and pruning. It is the responsibility of the permittee to maintain the planters and their contents.
- Movable planters may be placed on tree grates. Remove these at the request of the City Arborist.
- Planters should be placed no closer than two feet (2') from the face of curb.
- Maintain minimum one foot (1') clear space between planters and other streetscape furnishings; no clear space is required between planters.
- All plant materials with spines, thorns, or any other sharp protrusions are not permitted in the public right-of-way.
- Advertising is not permitted on planters.

## Public Art

All art that is placed on the sidewalk or on a building face adjacent to the sidewalk, whether permanent or temporary, should not be a hazard to pedestrians and must meet all current codes, guidelines, and requirements, especially as it relates to the Americans with Disabilities Act (ADA). Art placement in the public right-of-way must conform to the general placement guidelines for streetscape elements. The location of artwork in the public right-of-way is to be coordinated with the City of Burlington and Burlington City Arts.

## Public Restrooms

Restrooms are an essential facility for residents and visitors, and should be located in areas with high pedestrian activity, including near shopping, public parks, and highly frequented civic destinations.

- Public restrooms should be located near intersections in the Tree Belt/Furnishing Zone and sidewalk bumpout zone, a minimum of three feet (3') from the face of curb.
- Public restrooms must be placed a minimum of four feet (4') from existing sidewalk elements such as trees, benches, or street light poles.
- A minimum of five feet (5') of clear pedestrian through space must be maintained at all times.
- Public restrooms must not be placed adjacent to bus stops or fire lanes.
- Sidewalk restrooms are not recommended on sidewalks fronting an eating establishment.

## Ramp Placement

Good intersection design practice suggests that all pedestrians enter a crosswalk at the same point. The placement of a curb ramp can help direct pedestrians to the preferred crossing location. Curb ramp placement is affected by curb height,

crosswalk location, curb radius, and the location of other elements such as utility poles.

Paired curb ramps are preferred rather than a single diagonal ramp because they lead directly into crosswalks and have the added benefit of providing directional information to visually impaired pedestrians with regards to the location of the corner and the crossings. Pedestrians using wheelchairs must “square off” to approach a change of slope with both front wheels on the ground at the same time. A skewed approach would leave one caster on the ground, compromising balance and control.

## Street Lights

- Minimum 10' from street trees.
- Maintain 36" min. clear space between street light pole base and other streetscape fixtures.
- Minimum 6' from fire hydrants and 4'–5' from driveways.

## Street Trees

It is preferred to have consistent street tree spacing when possible, but the location of driveways, intersections, and the need to maintain uniform light levels within the ROW may require some variation based on the following guidelines:

- Typical street tree spacing for large and medium trees is 40' on center. (30' min.)
- Typical street tree spacing for small trees is 30' on center. (25' min.)
- Intersections: minimum 30' from intersections
- Street Lights: minimum 10' from street lights
- Curb Cuts/Driveways: minimum 6' from curb cuts/driveways
- Parking Meters: outside of tree grate area OR minimum of 4' in greenbelts
- Public Signage: distance will vary based on type of sign, direction of sign, intended viewer of sign, and viewsheds.

## Traffic Control Devices

Traffic control devices (traffic and or parking signals, lights, etc) should not be placed on curb ramps, and should maximize visibility for the appropriate roadway user pursuant to the applicable standards. The application, location, type, dimension, color, performance criteria, and other specifications of traffic control devices should be determined according to the applicable MUTCD and FHWA standards. In the downtown core, the preference is street lights combined with traffic signals, in combination with pedestal-mounted traffic signals.

## Transit Shelters & Stops

Good transit access, combined with ease of use and safe and comfortable transit waiting areas, makes transit more accessible for all users, thereby increasing pedestrian traffic in the downtown. Well-designed transit stops can serve multiple functions while providing services for transit users as well as for other pedestrians. Transit stops should be well-designed public spaces that allow riders to wait comfortably and out of the elements.

- Bus stops and shelters are typically located on the down stream side of an intersection, and should be placed to maintain intersection sight lines, and should not limit access to undeveloped parcels.
- GMT's adopted bus shelters should be used throughout downtown where possible. All efforts should be made to integrate transit facilities to create a unique identity for downtown.
- Shelters and other transit furniture (including trash cans, bollards, and signs) currently adopted and used by Green Mountain Transit around the Downtown Transit Center should be adopted throughout downtown wherever feasible per their transit stop classification requirements.
- Major transit stops should incorporate: shelter (with integral seating), wayfinding and information kiosk, trash cans, special safety lighting, bus stop pad per GMT standards, bicycle racks, and sign.
- Standard transit stops should include: bench, trash can, bus stop pad per GMT standards, and sign. These stops may incorporate bicycle racks as needed.
- Bus stop shelter locations must maintain clearance zones that meet ADA requirements for wheelchair accessibility to and from the shelter, and to board and exit the bus.
- Bumpouts (bulb-outs) should be considered as part of the transit stop wherever possible.
- Bus shelters must also comply with the general guidelines outlined for all street furniture.

## Trash & Recycling Receptacles

It is important that litter containers be provided at frequent intervals. Their use should be convenient and they should be well-maintained at all times.

- Trash and recycling containers should be placed in the Tree Belt/Furnishing Zone, and not on tree grates. They are not permitted in the Frontage Zone.
- Trash and recycle containers should be placed a minimum of every 600 ft, on each side of the street, or as determined based on adjacent uses, except on residential streets.
- Containers should have a covered top to keep snow, water and animals out, and should not be locked. Containers must be maintained in a clean and sanitary condition at all times.
- Trash/Recycling Receptacles shall be mounted in pairs.
- Trash/Recycling Receptacles must be minimum twenty-four inches (24") from other furnishings (parking meters, benches, newsracks, etc.)
- No clear space is required between trash and recycling containers.

## Tree Grates & Guards

To increase the walkable area of sidewalks as well as to protect street trees, grates are recommended for all streets with heavy pedestrian activity or constrained sidewalks.

- Standard tree grate widths are six feet (6') and eight feet (8') with special conditions requiring a five foot (5') option.
- Streets with planting strips do not require tree grates.
- Tree grates need to be inspected regularly and enlarged as necessary to accommodate tree growth.
- When tree grates are used, tree guards are required. At times, trees with guards must be inspected to ensure tree and guard are not rubbing.
- Grates should meet accessibility standards.



- Maintain 1' min. clear space between streetscape fixtures and tree well curbs/fences, or tree grates.
- Only Tree Guards may be mounted to tree grates. No other fixtures may be mounted to tree grates.

## Vehicular Wayfinding Signs

The vehicular wayfinding system directs motorists into the downtown core through current gateway streets. Directional signs are placed at key decisions points within the network to direct motorists to their destinations, where parking signs would direct them to the most appropriate parking facility. Vehicular wayfinding signs must comply with the general guidelines outlined for all street furniture. Place only enough signs to lead a driver confidently to the destination by the best route. Avoid adding clutter to the streetscape; cluster signs in strategic locations on a single post where possible.

## Vendor Carts

Street vendors ranging from food carts to craftspeople add life to the sidewalk and should be encouraged on commercial streets, space permitting. Church Street Marketplace maintains guidance for carts on the marketplace; for other carts within the public right-of-way, the following guidelines apply:

- Vendor carts may be located within the Tree Belt/Furnishing Zone, Bumpouts or Frontage Zones as long as they comply with the general guidelines outlined for all street furniture.  
\*No vendor carts can be placed within the Clear Sidewalk Zone.
- Vendors may be located in the Tree Belt/Furnishing Zone and must leave at least six feet (6') of clear pedestrian passage between their cart and the nearest property line.
- Vendor carts cannot exceed 32 square feet (inclusive of all appendages), and 8 feet high at the highest point on the cart.
- No element of the vendor installation may interfere with access to any building including paths of travel and exiting.
- Vendor carts are not permitted on any sidewalks adjacent to an accessible parking space, a designated commercial loading zone, pedestrian loading zone, transit stop, or along a curb where parking or standing is prohibited.
- All food vendors must provide a durable trash and separate recycling can adjacent to the vending area.
- The installation must be well-maintained and kept free of litter and other debris.







# Public Placemaking

## Public Placemaking & Gathering

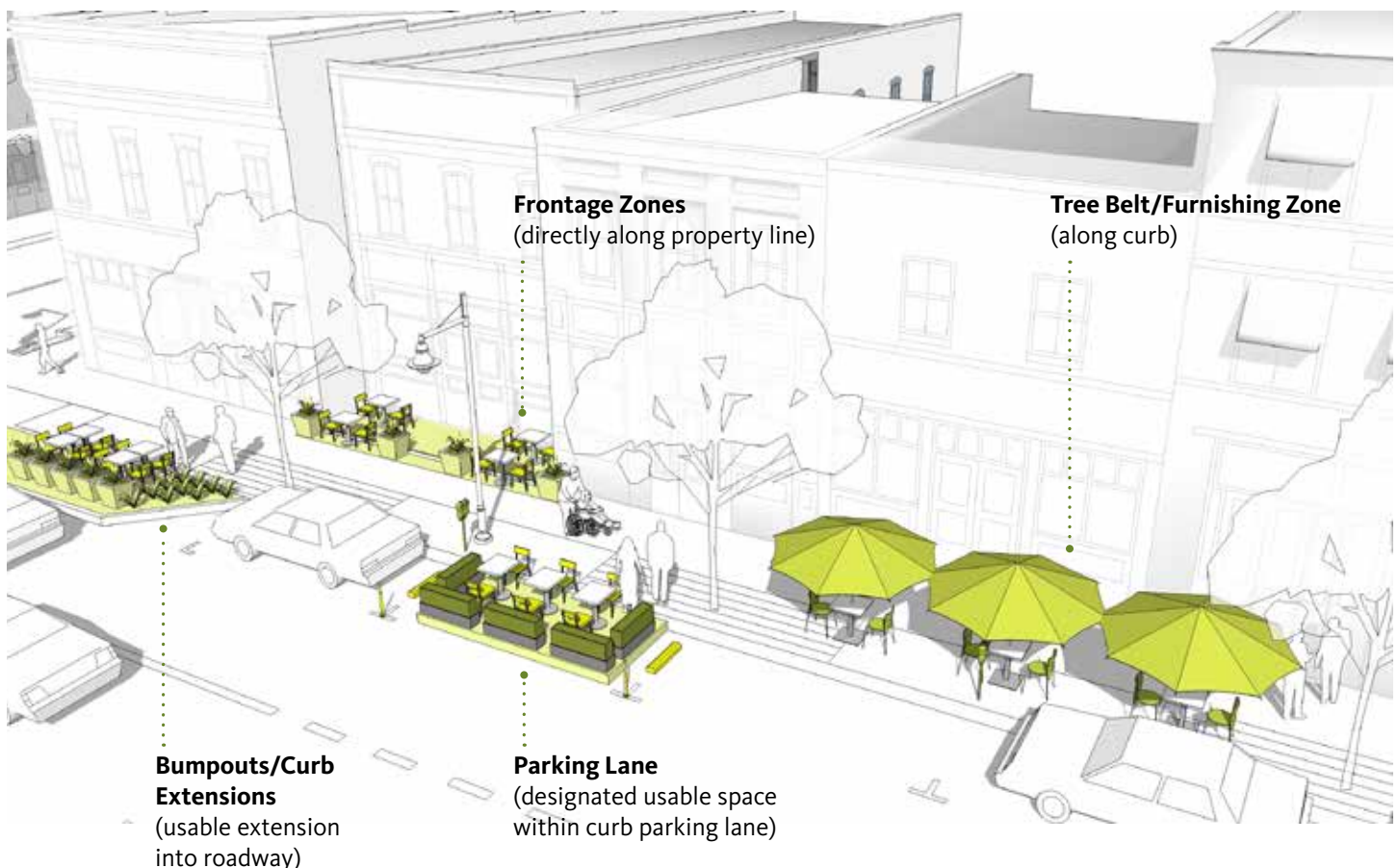
The creation of active, successful public places—public placemaking—usually occurs in or along publicly-owned spaces or rights-of-way: parks, plazas, streets, walkways. These are places which allow not only free public movement, but stopping and gathering for a variety of purposes. This may be as simple as a single person finding a place to sit and enjoy the view or observe passersby, or larger groups gathering to talk, socialize, eat, drink, and share the outdoor setting.

On a typical street, this gathering can generally occur in one of four locations:

- In the "Frontage Zone" adjacent to abutting private property and buildings.
- In the "Tree Belt/Furnishing Zone" along the sidewalk next to the roadway curb or edge.
- At an intersection on a "Bumpout" (also sometimes referred to as a "Bulb-Out" or "Curb Extension").
- In a temporary or permanent installation within the Parking Lane (also known as a "Parklet" or a "Bike Corral").

All of these public spaces can function to some extent on their own, independent of private property and private places. But along most great streets, these public places interact harmoniously with the facades and features of private buildings and spaces. In fact, *planBTV Downtown Code*, in its section on "Frontage Types," encourages active physical frontage and uses along the sidewalk; a well-designed public sidewalk helps facilitate that symbiotic relationship. Though they are driven by different rules and considerations, when public space and adjacent private activity work together, the result is usually a more vibrant public environment. These standards establish guidelines for the design of and installation within these areas, while providing enough flexibility for these placemaking opportunities to respond to the adjacent private uses which may change overtime.

*PlanBTV Downtown Code* includes two form districts in downtown: the "core," and the "center" (see [page 33](#)). While there may be properties, or even entire blocks, that are residential in nature, public gathering within the ROW is still anticipated and should be enabled, but not to the degree that is expected within commercial areas. Therefore, the public placemaking described in these Standards is intended for areas within the "core" and "center" districts which have commercial or cultural activity predominating the street level.



## Example Placemaking Solutions



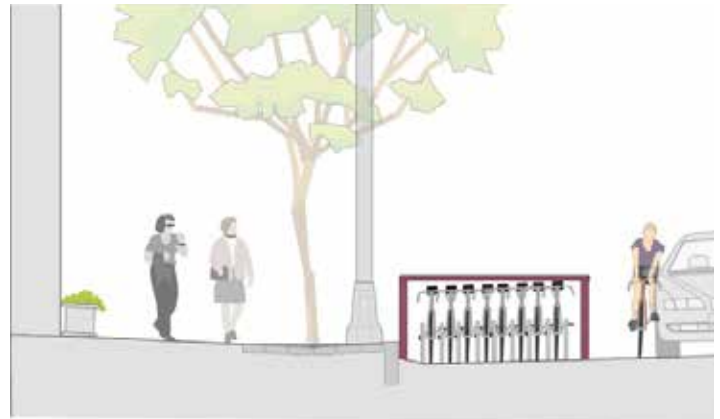
*Chairs and tables in the Frontage Zone, demarcated with posts and rope*



*Planters in the Frontage Zone*



*Chairs and tables in the Tree Belt/Furnishing Zone, demarcated with posts and rope*



*Bike corral in the Parking Lane*



*Café/restaurant seating spanning both the Tree Belt/Furnishing Zone and a parklet within the Parking Lane*



*Parklet with sidewalk-level platform and seating in the Parking Lane*

## Frontage Zones (Private & Public)

### Setback Areas (Private, may allow public access)

These are spaces which blend with the sidewalk space and expand the possibilities of placemaking (see *planBTV Downtown Code* for Forecourt—14.5.15, Gallery—14.5.16, or Arcade—14.5.17). They can be paved terraces or plazas (covered or uncovered), or storefronts which open broadly onto the sidewalk and become part of its activities. Trees and other landscaping on the private property effectively become landscaped edges of public space. When used sparingly and in harmony with the public ROW,

these can help make public sidewalks a “place” where the public may gather or enjoy a brief reprieve from the continuous street wall that typically defines the edges of the ROW. However, if overused, they can erode the sense of enclosure along a street, and dilute the physical and visual connections that buildings have with the active uses along them. Public officials, private stakeholders, and designers should work cooperatively to maximize mutual private and public benefit through the integration of such setbacks into the overall street design. In cases where the approved setback is adequate, the active frontage zone may sit entirely on the property rather than in the public right-of-way.



*At Burlington's privately owned Courthouse Plaza on Main Street, the paved plaza created by the building setback effectively widens the public space of the sidewalk. However, streetscape elements have been placed in a way that makes the bike racks unusable.*



*At the Chittenden County Courthouse on Main Street, the building setback creates a public landscape that effectively widens the public space of the sidewalk.*



*The ground-floor facade of this café is set back onto the private property in order to create a covered outdoor space next to the sidewalk, effectively widening the public space (but not the walkable area) while enlivening the public environment and sense of place.*



*The facade of this florist shop is set back onto private property to create an outdoor display space that is protected by an awning; floral displays are extended across the walkway into the utility zone, effectively creating each day a temporary public landscape that pedestrians pass through, enlivening their experience on the street.*



## Storefronts (Private, with public interface)

The architectural facade of a building at the property line along the sidewalk forms the vertical edge of the public space, and can contribute powerfully to placemaking (see *planBTV Downtown Code* Frontage Types, especially "Shopfront"—14.5.13). The building can create a sense of enclosure and protection, particularly when a "street wall" is established by buildings that have a consistent setback along an entire block. These buildings offer the visual and tactile pleasure of architectural materials and ornament; provide illumination at night; install signage with color, form and typography that adds interest and information to the street; present broad windows that provide views of activities within; offer sun and rain protection with overhanging awnings or other structures; and of course offer goods, food, beverages, or services to activate options for passing pedestrians. All of these help make the public right-of-way, and specifically its sidewalks, a "place" where the public may gather and enjoy. Public officials, private stakeholders, and designers should work cooperatively to maximize the mutual private and public benefit of private building facades and storefront activity within the overall street design.



*A shop owner cleans windows and waters plants along Main Street—the architectural materials, wooden door, plate glass, and planter are all private contributions to the quality of place in the public right-of-way.*



*Brightly colored signage and umbrellas against a white two-story facade, all on private property, create a strong sense of place along the sidewalk, framed and enhanced by the foliage and shade of mature trees in the public right-of-way.*



*Intimately scaled and colorful bay windows with storefront displays, attractive store signs, planter boxes, and tables and chairs are all private contributions which add visual interest and vitality to the narrow public sidewalk.*



*On Main Street, the signs on each of the Flynn Center's three facades contribute illumination, information, color, protective cover, and spatial definition to the public sidewalk.*



*The deep recesses of a historic facade provide space for covered outdoor seating along the public sidewalk.*



## Frontage Zone (Public)

The approximately 3'–6' of sidewalk in front of a downtown business, shop, restaurant or cafe can be of great importance both in the success of the business and in the "place" qualities of the public sidewalk and the overall public space of the street. The *planBTV Downtown Code* establishes a range of "Frontage Types," and this section is primarily related to private, commercial frontage which meets the Code's definitions of Shopfront (14.5.13), Forecourt (14.5.15), Gallery (14.5.16), or Arcade (14.5.17)

Because the Frontage Zone falls within the public ROW, it belongs to the public and should be regulated to assure public benefit. These guidelines are intended to encourage rather than inhibit the lively and imaginative use of this zone (whose width will vary depending on street conditions). Business operators have an inherent interest in creating an attractive environment along their frontage, and in some cases this includes providing the furnishings to encourage gathering: sitting, leaning, looking. The goal is to integrate the public Frontage Zone and the private Frontage for maximum public benefit and economic vitality.

Tables and chairs can be arranged in as little as 3.5' in depth. Other elements can include planters and flower boxes, displays of goods, and signs. All of these can help make the public right-of-way, and specifically its sidewalks, a "place" where the public may gather and enjoy. Adequate space must be assured to allow for the safe and unobstructed pedestrian pathway; but some crowding should be viewed as acceptable, as occasional jostling and "rubbing shoulders" is one of the characteristics of vibrant city life. The determination of locations suitable for private utilization of the Frontage Zone should be made in consultation with the City through the Department of Public Works encumbrance process.



Even on a narrow sidewalk with no trees, placemaking is possible: at this café on College Street, a single row of chairs with small round tables is shaded by an overhead trellis structure that supports planters.



At this London pub, the Frontage Zone is used exclusively for standing, which maximizes the users and resulting liveliness. Alcohol is permitted only within the Frontage area.



The Frontage Zone of this café is well related to the interior by large plate glass windows.



This dining area, which straddles the property line, combines the Frontage Zone with the building setback to widen its usable area.



## Tree Belt/Furnishing Zone (Public)

This zone, which may range in width from 6'–11' and extend nearly the full length of the city block, provides many opportunities for public placemaking. Its location and size allow for a range of uses, including:

- seat walls, benches, and built-in seating platforms
- bike parking and amenities
- chairs and tables (for public or commercial use)
- kiosks with maps and local event information, bulletin boards
- historic or cultural displays and art exhibitions
- specialty lighting
- rain gardens, tree pit planters

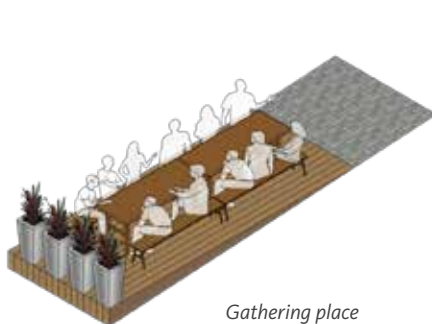
This zone, along with bumpout areas, is also critical to the maintenance and provision of a functional public realm. These spaces may be used for snow storage in the winter, and are a key portion of right-of-way that allows for the capture and treatment of stormwater before it can carry pollutants to the public waterways. The Street Ecology section will describe how these areas can be treated to achieve these goals. Ultimately, these spaces can assist with the activation of the streets, provide areas for socialization, and meet the goals for environmental performance. The determination of which uses and in what quantities should be determined on a block by block basis, in consultation with the City through the Department of Public Works encumbrance process, and with the input of adjacent stakeholders.



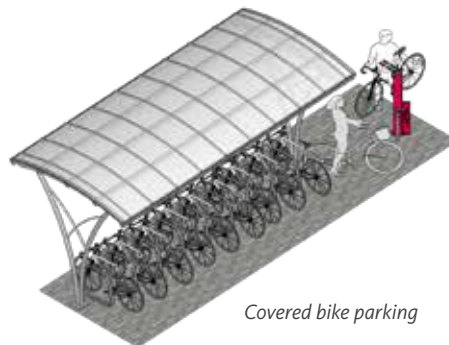
*This paved tree belt accommodates tree wells and guards; planters with flowers; benches; bike racks, and waste receptacles.*



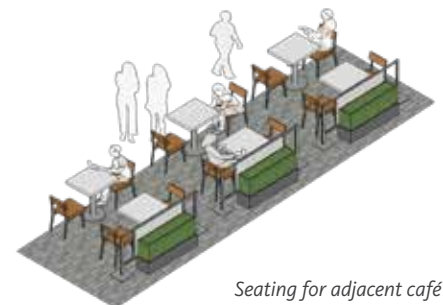
*The extensive rain gardens both in the tree belt and in the adjacent bumpout frame the public walkway with greenery; a sign explains the purpose and design of the stormwater system.*



*Gathering place*



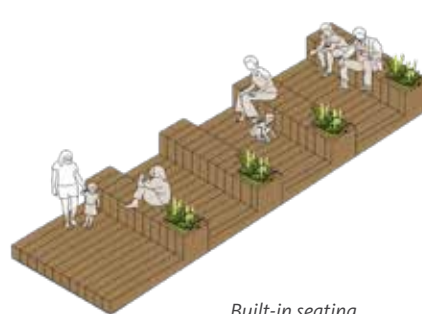
*Covered bike parking*



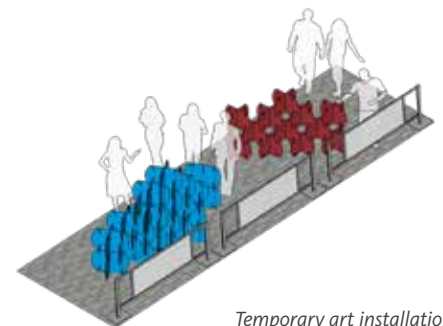
*Seating for adjacent café*



*Tents for a festival*



*Built-in seating*



*Temporary art installation*

## Bumpouts

Bumpouts encourage placemaking in the same lateral zone as parklets and corrals, but at intersections instead of mid-block. Bumpouts make crossing pedestrians more visible and shorten crossing times. They also provide critical space to plant trees and capture stormwater runoff in low-lying rain gardens. They can also support public placemaking by providing space for seating and information kiosks. Because of their location, they may also provide long views down the street corridor; and their higher visibility may add to the street's overall impression of liveliness. They can be created with both permanent or temporary materials and installation techniques.



*Concrete bumpout with adjacent planter barrier, wood deck, and seating*



*Interim bumpout created with paint and delineators, furnished with bikeshare station*



*Construction of a curb extension, or "bumpout"*



*Bumpout with pavers, tree well, bench, and trash receptacle*



## Parking Lane



Photo credit Samuel Heller—San Francisco Parklet Manual Version 2.2

Streets and sidewalks in downtown Burlington make up thirty-three percent (33%) of the City's land area and are an integral part of daily experience for Burlingtonians. But often sidewalks are too narrow to accommodate outdoor amenities for adjacent businesses and uses. In some cases, sidewalks can effectively be widened by extending public placemaking beyond the curb into the roadway, taking advantage of the 7.5' Parking Lane adjacent to the curb. These spaces, commonly repurposed into parklets or bike corrals, are usually captured by removing one or more on-street parking spaces and introducing other uses. Some uses can sit directly on the roadway, while others, are built on raised platforms level with the sidewalk, effectively widening the Pedestrian Zone. These areas are usually protected at each end by a parked car, and along the travel lane by a barrier.

Placemaking elements in the Parking Lane balance local needs by:

- creating a better balance the uses of city streets for all users
- encouraging walkability and cycling
- supporting lively, vibrant streets
- fostering neighborhood interaction
- supporting local businesses

The following pages provide guidelines for placemaking within the Parking Lane for:

- Parklets, which are public spaces created from a platform at sidewalk level that extends the Pedestrian Zone into the Parking Lane. They generally cover one or two parking spaces, and include an open accessible space for people to sit, rest, gather, eat and many other activities.
- Bike Corrals, which are designated areas within the Parking Lane that accommodate high capacity bicycle parking and other bicycle amenities. These could accommodate general public parking or bike share hubs.



Early "parklet" in Paris: dining in the street between two parked cars



Contemporary parklet with shade covering, located in the Parking Lane with appropriate buffers

## PARKLET GUIDELINES & SETBACKS

PlanBTV Walk/Bike encourages the creation of a parklet plan for the construction of these elements throughout the City. Until such a time a resource might be available, the following pages outline the details regarding the placement and performance of parklets within the public right-of-way.

### Context

Parklets should be located primarily along active streets with retail, restaurants, civic and other mixed land uses. Generally, parklets are not located on residential streets.

### Design Speed & ADT

Parklets are recommended on streets with design speeds of 20 MPH or less, and with lower traffic volumes and lower class vehicle utilization. Parklets on streets accommodating higher speeds, higher traffic volumes, and larger vehicle classes may be considered on a case-by-case basis.

### Parking Spaces

Parklets are sited along the curb line on streets where on-street parking spaces exist. They can be considered in any location where there are or would be space(s) for on-street parallel or angled parking, including spaces with metered or unmetered parking.

### Corner Locations

In general, parklets should be located at least one parking space away from an intersection or street corner. In some instances, an on-street bicycle corral at least 15' in length, a curb-extension (bulb-out), or some other physical barrier may allow the city to consider a parklet closer to the corner.

### Other Locations

Other locations adjacent to the curb including those fronting driveways should be considered on a case-by-case basis.

### Special Curb Zones

Parklets are not allowed to replace accessible parking spaces, unless the accessible parking space is relocated in close proximity. In most instances parklets are not permitted along curbs where parking or standing is prohibited.

### Transit

Parklets are not permitted in a bus stop, but may be located adjacent to a bus stop.

### Utilities

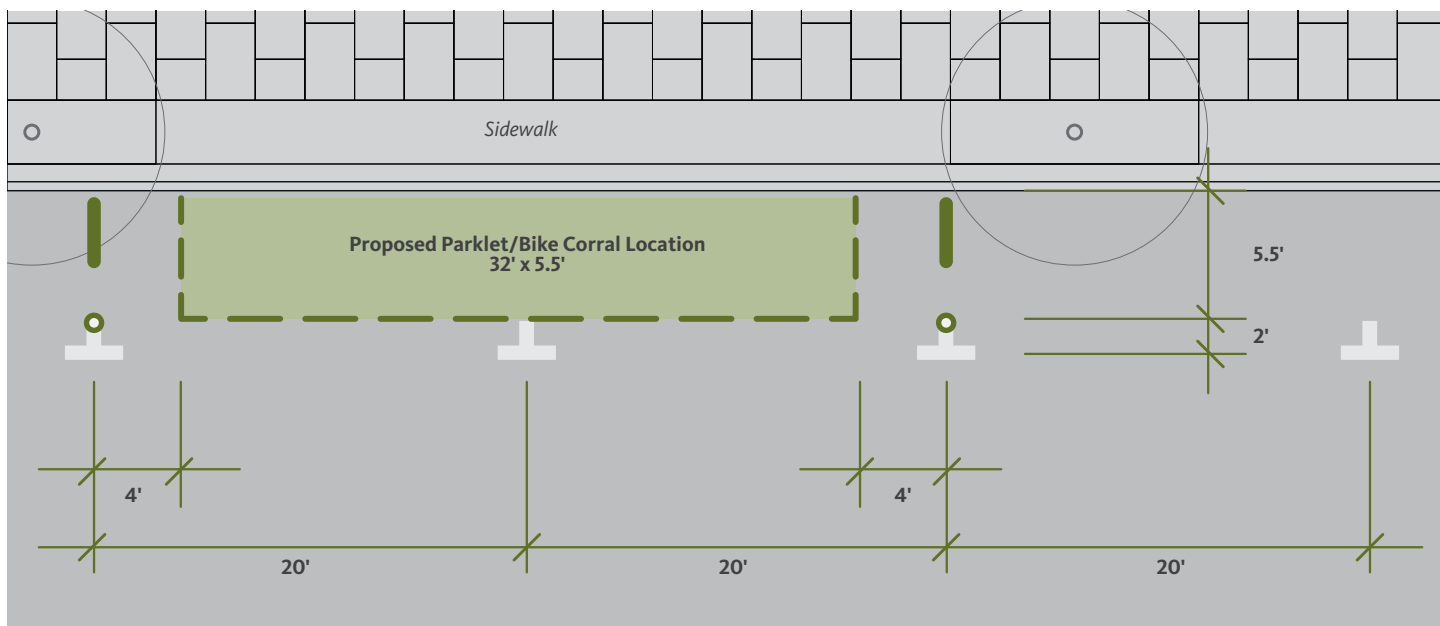
Parklets may not be constructed over utility access panels, manhole covers, storm drains, or fire hydrant shut-off valves.

### Designed for Easy Removal and Restoration

Parklets should be designed for easy removal in case of emergency, for access to underground public utilities, and during the winter for snow removal and storage. For long-term installations, parklet locations and duration of installation should be reviewed for potential conflicts with future programmed streetscape improvements.

### Parklets Are Public

Parklets are public spaces and should feel open and welcoming to passersby. Parklets are encouraged to display signs which state that all seating is publicly accessible at all times. When developing the parklet plan, the City will consider whether a policy on the private use of parklets by sponsors is appropriate.



Parklet dimensions and setbacks

### No Advertising

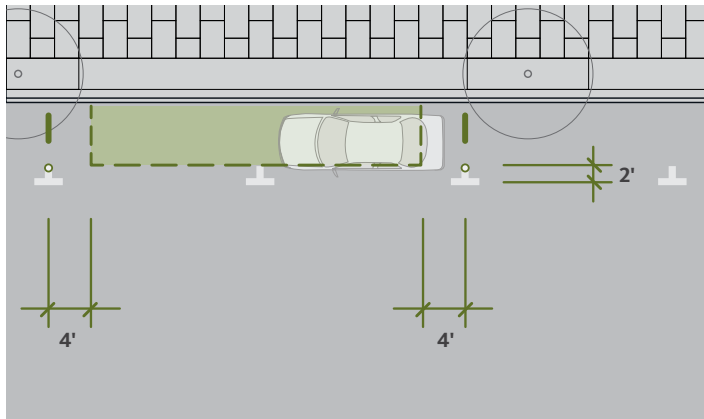
Logos, advertising, or other branding should be prohibited. A small unobtrusive plaque recognizing project sponsors and material donors may be acceptable.

### Siting Requirements

All parklet structures must be setback on three sides, creating clear areas as a buffer from adjacent on-street parking spaces, driveways, and travel lanes.

#### Parallel Parking

When replacing parallel on-street parking, most parklets should be the size and length of one or two parking spaces. Larger parklets could be considered depending on circumstance and existing site conditions. Smaller parklets have also been successful. For parallel parking, the parklet structure must be set back 48" from adjacent parking spaces, and 24" from travel lanes (18" minimum).



Parallel parking

### Diagonal Parking

Where parklets are installed in diagonal parking spaces, it is recommended that they be designed to be the size of three combined parking spaces to maximize habitable space within the parklet. For diagonal spaces, the edge of the parklet must be set back 36" from the adjacent parking space on either side, and 24" from travel lanes (18" minimum).

#### Nearby Driveways

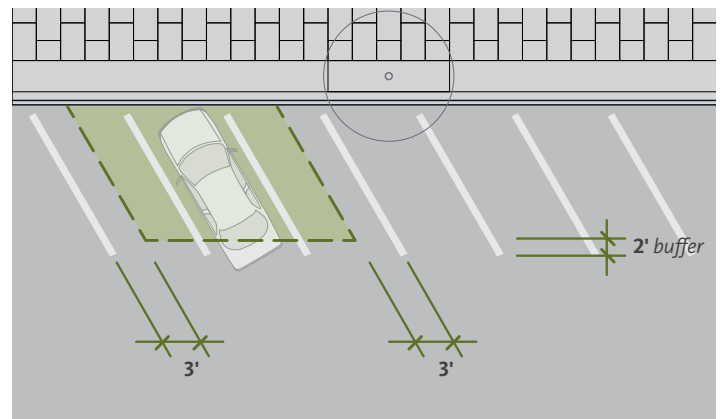
Parklets located next to driveways must be set back 3' from the outside edge of the driveway.

#### Areas Without Marked Parking Spaces

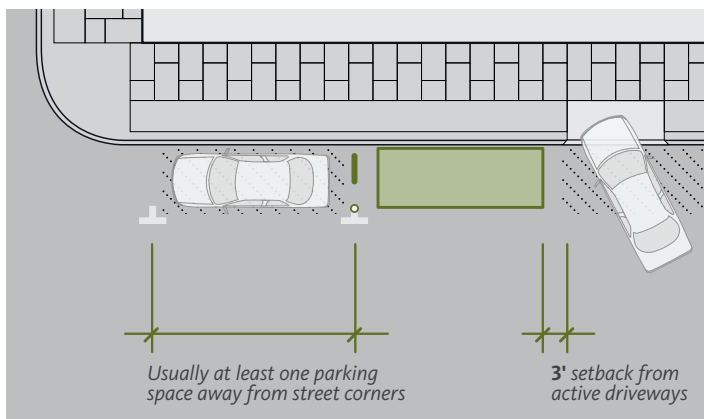
In areas where parking spaces are not marked on the pavement, the proposed parklet should not leave an "orphaned" space that is too small to use as a full parking space.

#### Street Slope

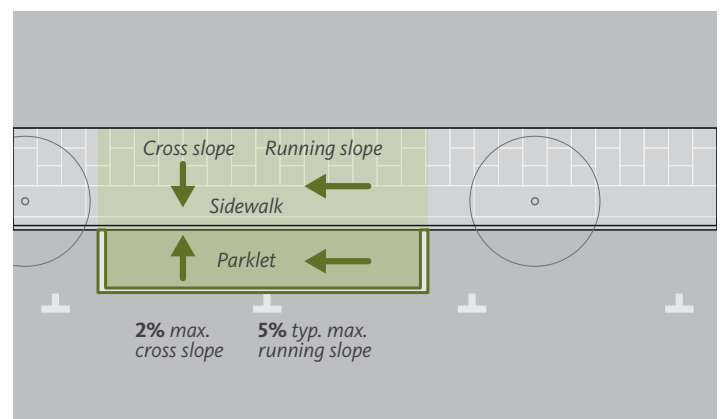
Parklets are generally recommended on streets with a running slope (grade) of 5% or less. Parklets may be permitted on streets with a running slope (grade) over 5% if the parklet is designed to provide safe access for wheelchair users.



Diagonal parking



Corner locations and driveways



Street Slope

## Platform

### Threshold

Any openings between the sidewalk and the Deck Surface shall be flush without a horizontal or vertical separation greater than ½". Changes in level ¼" to ½" high maximum shall be beveled with a slope not steeper than 1:4 (25%).

### Bolting

Bolting into the street or penetrating the surface of the road in any way is strongly discouraged. Parklets may be bolted to the existing curb, but only with a restoration plan.

### Platform Surface

The top of the parklet platform must be flush with the sidewalk with a maximum gap of ½". In the case of a sloping street, see accessible guidelines in the following section.

### Surface Materials

Parklet materials are highly recommended to be slip-resistant. Loose particles, such as sand or loose stone, are not permitted on the parklet.

### Substructure

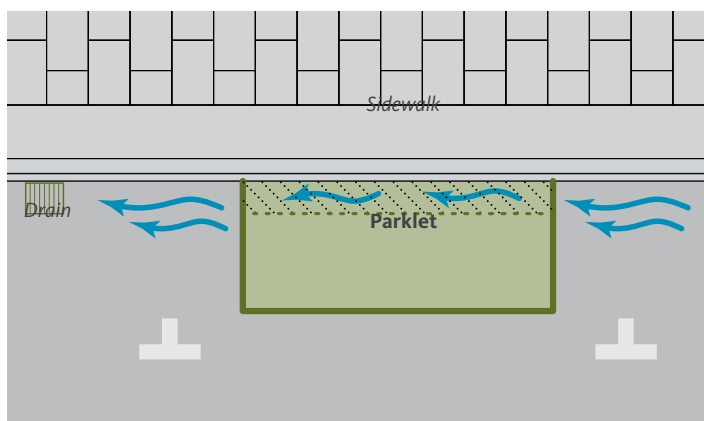
Parklet platform load-bearing weight standards vary by agency. At a minimum, design for 50 lbs/sq. ft.

### Access

If the platform base is not a solid mass, the clear space underneath the platform surface must be accessible for maintenance through access panels, removable pavers, etc.

### Drainage

The parklet cannot impede the flow of curbside drainage. Designers are strongly encouraged to cover openings at either end of the parklet with screens to prevent debris buildup beneath the deck and in the gutter.



Drainage

## Enclosure

### Buffer/Edges

The parklet should have an edge as a buffer from the street. This can take the form of planters, railing, cabling, or some other appropriate enclosure that is at least 6" in depth. The height and scale of the buffer required will vary depending on context. If cable railing is used, Building Code requirements must be followed, which indicates spacing between cables cannot exceed the diameter of a tennis ball.

### Visual Connection to the Street

Designs should allow pedestrians on either side of the street to see into the parklet. Continuous opaque walls above forty-two inches that block views into the parklet from the surrounding streetscape are highly discouraged.

### Overhead Elements

Overhead elements that span the sidewalk and connect the parklet to the adjacent building facade are not permitted.

### Extend the Sidewalk

Parklets should be designed as an extension of the sidewalk, with multiple points of entry along the curbside edge.

### Parklet Walls

While not visible from the sidewalk, the outside of the parklet enclosure is highly visible from across the street. Large blank walls can be an invitation for tagging. This can be mitigated by adding visual interest like pattern, color, modulation or planting.



Installation of parklet platform in the Parking Lane



Finished parklet in Parking Lane, with planter enclosure



## Elements

### Integrated Elements

Parklets should include some permanent seating integrated into the parklet structure. This ensures that the parklet still feels welcome after movable furniture like tables and seating are taken inside at night.

### Movable Elements

The Material and Furnishings Palette identifies options for movable tables and chairs on [page 292](#) that can be utilized in public parklets. Other options can be utilized to contribute to the theme or arrangement of the parklet.

### Planting

Integrated planting is strongly encouraged. Native plants, plants that provide habitat, and drought tolerant plants are encouraged.

### Lighting

Lighting elements are strongly encouraged, but electrical connections to buildings will require separate electrical approvals. Designs should strongly consider solar-powered lighting over the option of running electricity from an adjacent building.

### Bicycle Parking

Integrated bicycle parking is strongly encouraged. The Materials and Furnishings Palette identifies options for temporary and high capacity bicycle parking on [page 296](#) which are preferred for bike corrals, although custom racks may be installed as well. Bicycle parking can be incorporated into the parklet proposal in the following ways:

- Custom bicycle racks integral to the parklet structure.
- On the parklet platform. Applicants may wish to install bicycle racks on top of the parklet platform.
- On-street bicycle corral (adjacent to the parklet).

### Art

Parklets are encouraged to include a diversity of art including conventional elements, interactive pieces, performance and others.



*Parklet with built-in benches*



*Parklet with movable chairs and tables*



*Bike corral in Parking Lane, sized to a single parking space*



*Mobile parklet*

## Accessibility

### Accessible Path of Travel

An accessible route must connect the sidewalk to the:

- Parklet Entry
- Deck Surface
- Wheelchair Turning Space
- Wheelchair Resting Space

The Accessible Path must be a minimum of 48 inches wide on the sidewalk and not pass over tree wells. Once on the parklet's Deck Surface, the Parklet Path must be a minimum of 36 inches wide.

### Accessible Entry

The Accessible Entry is where the Accessible Path crosses the threshold from the sidewalk to the Deck Surface. An ideal Parklet Entry should be located in an unobstructed area where there is the least amount of running slope along the sidewalk and curb.

### Accessible Deck Surface

The portion of the parklet deck connected by the Accessible Path of Travel to the Wheelchair Turning Space and Wheelchair Resting Space must be level. The Accessible Deck Surface maximum cross slope (perpendicular to the sidewalk or curb) cannot exceed 1:48 (2%). The Accessible Deck Surface maximum running slope (parallel to the curb) cannot exceed 1:48 (2%).

For other Deck Surfaces, the running slope may not exceed 1:20 (5%). The Deck Surface shall all be on one level unless the change in level is served by a ramp, additional Parklet Entries, or otherwise permitted on a case by case basis.

When stairs or ramps are permitted, they must meet all building code requirements for rise, run, width, handrails, and contrasting stair striping for the visually impaired.

### Wheelchair Turning Space

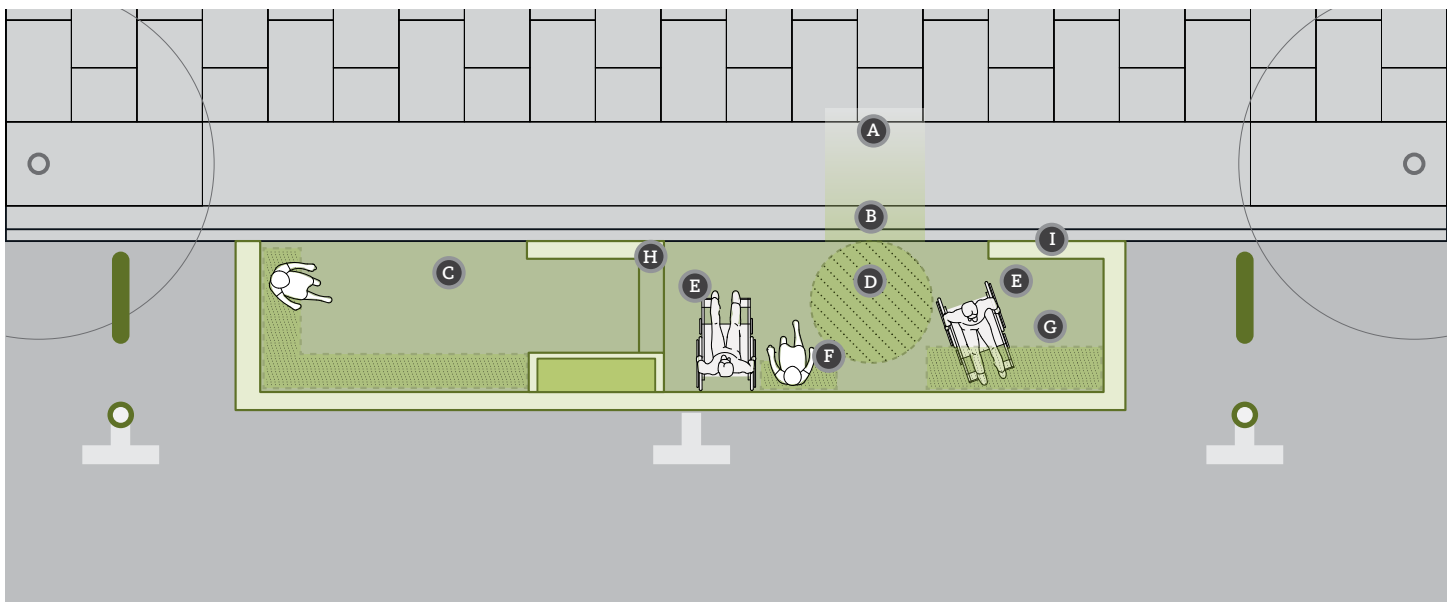
A Wheelchair Turning Space is a circular area 60" minimum in diameter for use by a person with mobility aid to make a 360-degree turn. This space shall be located entirely within the Parklet, unless otherwise approved. The maximum encroachment shall be 12" over the curb and sidewalk unless otherwise permitted on a case by case basis. Within this space there shall be no cross slope in any direction that is greater than 1:48 (2%). Alternatively a "T" shaped Turning Space is permitted.

### Wheelchair Resting Space

Wheelchair Resting Space has a 30" x 48" clear floor area. The Wheelchair Resting Space is permitted to overlap the Wheelchair Turning Space by 24" maximum in any orientation.

### Wheelchair User Companion Seating

If fixed seating is part of parklet design, it should be configured to accommodate companion seating for a wheelchair user. The Wheelchair Resting Space should permit shoulder-to-shoulder alignment adjacent to one side of the fixed seat.



- |                             |                                |                                       |
|-----------------------------|--------------------------------|---------------------------------------|
| Ⓐ Accessible path of travel | Ⓓ Wheelchair turning space     | Ⓔ Equivalent facilities               |
| Ⓑ Accessible entry          | Ⓔ Wheelchair resting space     | Ⓕ Step between terraces               |
| Ⓒ Accessible deck surface   | Ⓕ Wheelchair companion seating | Ⓖ Buffered edge where curb drops away |

### Equivalent Facilities

Where tables, counters, or drink rails are provided, at least one of each feature should be wheelchair accessible.

The top surface height of wheelchair accessible tables, counters and or drink rails should be 28"–34" above the Deck Surface. Wheelchair accessible tables, counters, and drink rails shall be approachable from the front and provide an unobstructed knee clearance that is at least 27" high, 30" wide and 19" deep. When movable tables are provided in lieu of fixed, at least one of the movable tables must also be accessible.

Where drink rails are provided, a 60" long portion of a drink rail shall have 36" wide and level space adjacent to it for a side-approach by a wheelchair user.

### Terraced or Multi-Level Parklets

For parklets proposed on streets with grades that exceed 5%, a terraced parklet with two or more habitable decks is acceptable. At least one of these terraces must be wheelchair accessible and provide equivalent seating, tables, and countertop facilities to those found in other habitable terraces.

### Wheelchair Accessible Entry

The accessible terrace will require a wheelchair accessible entry from the sidewalk. The wheelchair accessible entry may be achieved with a structure on the sidewalk within the sidewalk furnishing zone that provides transition between the sidewalk and parklet deck.

### Ramps, Steps & Stairs

Communication between terrace levels may be achieved with a ramp with a running slope not to exceed (1:20) 5%; steps or stairs. Any step or stair will require a warning strip at the nose of the step and handrails per building code.

## PARKLET MATERIALS

Parklets are intended to be aesthetic improvements to the streetscape. They should be designed with this in mind, ensuring that the materials that are used are high quality, durable, and beautiful.

### Locally Sourced Materials

Sourcing locally produced materials for parklets supports the local economy and reduces the embedded carbon footprint of the final structure by reducing transportation costs.

### Recycled and Reclaimed Materials

Choosing recycled and reclaimed materials for parklets is highly recommended and has the additional benefit of reducing construction costs and keeping materials out of landfills.

### Low Emission Materials

Choosing paints, stains, glues, and other materials that emit zero or low levels of volatile organic compounds (vocs) helps improve air quality as well as the health of the people who are constructing and using parklets.

### Avoid Plastic

Plastic of any kind, including Plexiglas, is strongly discouraged.

### Materials that Are Easy to Maintain

Having a strategy for removing graffiti, and replacing or repairing damaged parklet features such as plants, railings, or other elements is highly encouraged. Whereas some materials may cost more initially, they may ultimately save money in maintenance costs. For example, aluminum costs roughly three times as much as steel but when tagged, it can simply be cleaned with acetone. Project sponsors are ultimately responsible for making sure that their parklet is kept clean and in good repair.

### Sustainable Timber Products

Parklet designs may not use tropical hardwood or virgin redwood. This includes fsc certified wood products.

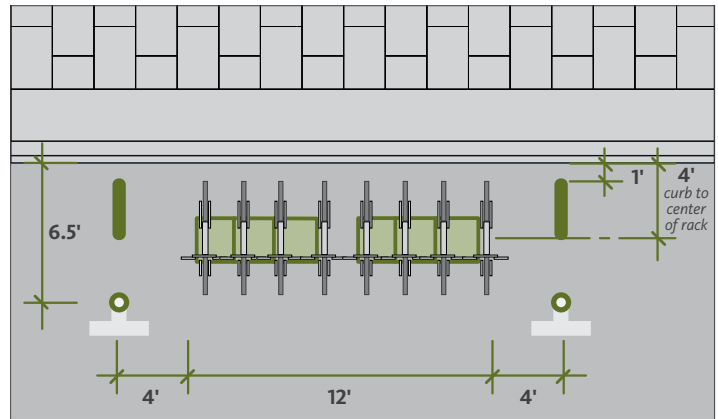
### No Pressure Treated Wood or Plywood

Pressure treated lumber or plywood wood are not allowed in places where they will be visible.

## BIKE CORRALS

A bike corral is a designated area for short-term bicycle parking. Bike corrals provide parking for a number of bicycles in a compact area. Bike corrals may be located on sidewalks, in parking lots, or other areas behind the curb, but are often placed in the curb lane of the street. By converting a parking space into space for a bike corral, cities can accommodate parking for 12 to 20 patrons on bicycles in the space typically used to park one automobile. Bike corrals can replace bicycle hoops, bike racks, freeing up sidewalk space for other uses such as additional pedestrian space or café dining. Bike corrals are an excellent solution for accommodating a large number of bicycles near specific activity areas and in areas with narrow sidewalks. Bike corrals are often highly valued by ground floor businesses. Despite removing a valuable curbside parking space, many businesses have found that bike corrals improve accessibility and visibility to their establishment(s) in addition to relieving pressure on limited sidewalk space.

- Bicycle parking is potentially needed in any frontage type, but is particularly necessary in Commercial, Civic/University, or Mixed use areas.
- In Destination Commercial areas, there may be competing needs for use of the Tree Belt/Furnishing Zone (e.g. for café dining & outdoor retail) and bicycle parking should be located to keep those areas open. Consider placing bicycle parking closer to intersections and not immediately in front of potential occupancy areas.
- Bicycle parking should be plentiful, dispersed, visible and conveniently located.
- Bicycle parking should facilitate transfers between modes. It should be accessible to major transit stops, transfer points and the Downtown Transit Center.
- Locating bicycle parking near to corners improves visibility, access to curb ramps, and accessibility to more block frontages. Parking should be located far enough away from the corner to avoid conflicts with curb ramps or sight lines.



*Placement of corral elements in standard 20' Burlington parallel parking space.*



## REQUIRED BUFFER ELEMENTS

The following elements are required for parklets and bike corrals within the downtown on "slow streets." Additional protection/buffers may be required on a case-by-case basis for streets with higher volumes of traffic, higher speeds, or streets which accommodate larger vehicle classes as required by the City Engineer.

### Safe-Hit Posts

Two (2) standardized safe-hit posts will be required, one for each end of the parklet. Posts must meet these specifications:

- Safe Hit Type 2 Guide Post
- 36" tall, white
- Surface Mount Pin Lock Base.
- Butyl Adhesive Pad or anchored
- Parallel parking: installed 7' from curb edge in line with wheel stop and parking bay markings
- Angled parking: install 15' from curb edge in line with parking bay markings

### Wheel Stops

Two (2) wheel stops will be required, one for each end of the parklet. Wheel stops must meet these specifications:

- 3' long
- 6" reveal, concrete (preferred) or black rubber with yellow stripes
- Mounted with bolts
- Parallel parking: installed 4' from outside ends of Parklet and installed 12" from the curb (long end perpendicular to curb)
- Angled parking: installed 15' from the curb (long end parallel to the curb) and 12" towards the center of the parklet from the Soft-Hit Posts

### Public Parklet Signs

Parklets must display two (2) "Public Parklet" signs, one at each end. Final placement of the signs will be reviewed to ensure optimum visibility. Not required on bike corrals. City to provide graphic file. Signs must meet the following specifications:

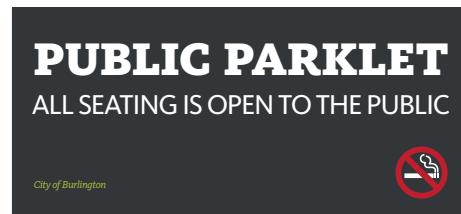
- 5" tall by 11" wide
- Copy must include "Public Parklet" and "All Seating is Open to the Public"
- 0.125" ( $\frac{1}{8}$ ") anodized aluminum wrapped with laminated digital print. Applied white copy—reflective.

## UPKEEP & MAINTENANCE

Parklets and bike corrals should be well-maintained and in good repair at all times. The City is encouraged to work with adjacent property owners, or to obtain parklet sponsors, which keeping the parklet free of debris, grime, and graffiti, litter, and to keep all plants in good health.



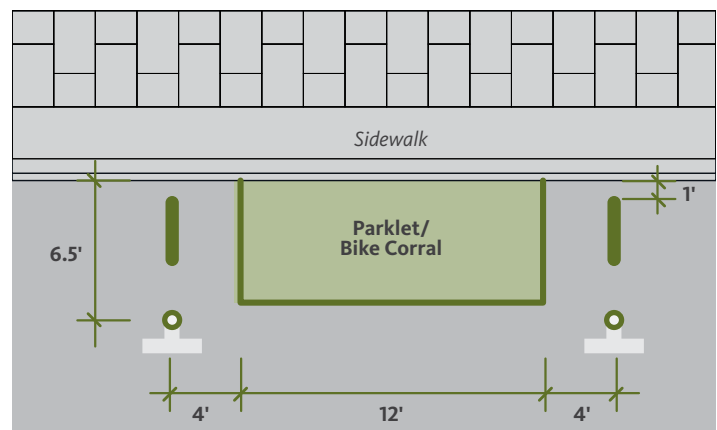
3 ft. concrete wheel stop



Public Parklet sign



Safe-hit posts



Placement of elements in standard 20' Burlington parallel parking space.

## Right-of-Way Encumbrances & Permits

Permits are required by the City of Burlington for any person, firm, or corporation to block or disturb the ground or pavement of any street, sidewalk, green belt, or curb within the right-of-way. The incorporation of dimensional, material, and siting standards for elements that may be placed in the right-of-way, for short or long term purposes, does not waive the requirement to obtain a permit to occupy the right-of-way. Businesses and property owners that wish to pursue opportunities for placemaking (i.e. locating elements within the public right-of-way) shall submit a permit application to be considered by the City.

Relative to the Great Streets Standards, encumbrance permits cover movable tables and chairs and permanent encumbrances (such as an accessible ramp) within the right-of-way. Requests for encumbrances should adhere to the *"Element Siting & Considerations"* outlined in this chapter. Particularly, new requests for permanent encumbrances or for occupation of the right-of-way for a defined period of time, may not encroach into the minimum 5' Clear Sidewalk Zone nor inhibit the required path for egress from adjacent buildings. A separate permit is required for A Frame Signs (Sandwich Boards). Permit applications shall adhere to the requirements articulated in the City Code of Ordinances, which are summarized in the *"Element Siting & Considerations"* section of this chapter.

## Existing Encroachments

Throughout downtown, there are existing encroachments into the public right-of-way-- many of which are known, but others which are yet to be discovered. Existing encroachments fall into two categories: permitted and unpermitted. Encroachments should be handled on a case-by-case basis by the City Engineer, but the following guidance should be consulted.

In the case of permitted encroachments, project designers should work with the City and the property owner(s) to determine if a design solution is achievable to remediate the encroachment. For example, if an entire block face is redeveloped, designers should explore whether the opportunity exists to adjust the grade of the sidewalk to meet ADA access requirements into adjacent buildings, thus eliminating ramps which encroach into the public right-of-way. If remediation is not feasible, project designers should accommodate the encroachment in the plan for the street.

In the case of unpermitted encroachments, project designers should work with the City and the property owner(s) to determine if a design solution is achievable to remediate the encroachment. If remediation is not feasible, and the encroachment provides the primary entrance/egress or required ADA accessibility to an adjacent structure, project designers should accommodate the encroachment in the plan for the street, and property/business owners shall be required to receive an encumbrance permit from the City per any effective City Policy regarding existing encroachments. If remediation is not feasible and the encroachment is non-essential to the safe operation of an adjacent structure (i.e. a landscape area, sign, parking area, etc) property/business owners shall be given the opportunity to remove the encroachment prior to the public project/reconstruction of the street at their own expense. In the case that it is not removed by the property/business owner, the project shall remove it and will not provide compensation to the property/business owner for the loss of the encroachment.



**This page intetionally left blank.**